

# FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 441. (No. 23, Vol. IX.)

JUNE 7, 1917.

[Weekly, Price 3d.  
Post Free, 4d.]

## Flight.

Editorial Office: 44, St. MARTIN'S LANE, LONDON, W.C.2.

Telegrams: Truditar, Westrand, London. Telephone: Gerrard 1828.

Annual Subscription Rates, Post Free.

United Kingdom .. 15s. 2d. Abroad .. .. 20s. 0d.

## CONTENTS.

	PAGE
Editorial Comment:	
Lord Cowdray and the Air Board .. .. .	549
The Lessons of the Folkestone Raid .. .. .	549
The Future of Commercial Aviation .. .. .	550
"Air Spying" .. .. .	552
Constructional Details.—XVII .. .. .	553
Honours .. .. .	555
The Sunbeam Aero Engines .. .. .	556
Royal Aero Club. Official Notices .. .. .	558
Answers to Correspondents .. .. .	559
The Roll of Honour .. .. .	560
Airisms from the Four Winds .. .. .	561
Discussion on Commercial Aeronautics .. .. .	564
Personals .. .. .	565
The British Air Services .. .. .	567
Aircraft Work at the Front. Official Information .. .. .	569
Side Winds .. .. .	571

## EDITORIAL COMMENT.

**L**ord Cowdray and the Air Board. It was with the most profound regret that we read of the decision of Lord Cowdray to resign the chairmanship of the Air Board. Lord Cowdray's record as a man of affairs stands high, and we had hoped he would have been able to see his way to devoting his immense experience to the work of the Board for at any rate the period of the war. We have not so many men of his calibre that we can see even one drop out of such an important post as that of Air Minister without serious misgiving. However, we take it that his lordship has very carefully weighed all the circumstances, and has come to the conclusion that he cannot longer devote to the Air Services the full measure of time demanded by their full efficiency, so there is no more to be said on that count. The reason given for his retirement is that he intends to devote himself for the future to the interests of his own business. For the past five months he has given up the whole of his time and energy to the affairs of the Air Board, leaving his own immense business to be looked after by others, and we are entitled to assume that Lord Cowdray now feels that he has been able to get the Board to that state of working

efficiency at which its administration can be taken over by another, though possibly a less able, man. At least, that is the construction we ourselves place upon his retirement, and we sincerely trust that we are correct in our deduction and that by the time these lines appear in print an announcement to that effect will have been made, unless, which would be very much to be preferred, Lord Cowdray has been induced to reconsider and withdraw his decision.

The question that falls to be considered, supposing that Lord Cowdray adheres to his decision, is that of his successor. In this connection we cannot conceive of a better choice than Lord Northcliffe. He has been fully alive to the importance of aviation from the start, and it is not in the least an exaggeration to say that no single person has done more for the practical encouragement of the movement than he. That encouragement, too, has been continuous, and directed with a broad appreciation of the conditions, manifesting a close acquaintance with all the practical problems associated with the development of a new movement. Then, Lord Northcliffe's recent acceptance of the chairmanship of the Committee appointed to deal with matters relating to the future of commercial aviation has a very close bearing on the question that now has to be settled. The Committee named must of necessity become one of the most important appendages of the Board as soon as the business of the war is settled, and we can imagine nothing more in accord with the fitness of things than that the Air Minister should be a personality who is more than sympathetically in touch with future development. All things, therefore, point to the fact that Lord Northcliffe is the man for the post, assuming that he is willing to accept it. If he cannot see his way to undertaking the vast responsibilities which lie on the shoulders of the head of the Air Service, the name that is in our mind and which has been most frequently mentioned when changes in the Air Board have been on the tapis is that of Mr. Winston Churchill. No doubt his appointment would be greeted with a storm of protest in certain quarters, but, speaking quite dispassionately, we do not see so very much reason at the bottom of it all. Doubtless, Mr. Churchill has made mistakes, but what man of action has not? He who does nothing at all is the only one to whose charge mistakes cannot be laid, and these are no times for the timid man who refrains from acting lest he should be wrong. Moreover, it has not been proved to the satisfaction of those who know most about the early history of the



war that Mr. Churchill was as wrong as his enemies would like us to believe. However, it is no part of our intention to embark upon a controversial discussion of the qualities of statesmanship displayed by any member of the late Government. The point at issue is simply that of whether Mr. Churchill would make a good Air Minister or not. To our way of thinking, he would prove a man of imagination, backed by prompt action. From the very first, he has taken a deep interest in aviation; to him was due the creation of the Royal Naval Air Service in the face of a great deal of powerful opposition from the "Old Navy," so that at least he possesses the merit of knowing more about the air services than many. Added to which even his worst enemies have never denied him the possession of outstanding ability as statesman and administrator.

\* \* \*

## The Lessons of the Folkestone Raid.

The lessons of the recent German aeroplane raid on Folkestone are several. First and most important is that it is quite impossible to entirely prevent well-organised raids by large numbers of aircraft, even though our defences against this form of invasion by the enemy have been immeasurably strengthened since the early days of the war, when these raids took place almost with impunity. It is as well to get that patent fact well impressed on our minds before we go any farther. We have to bear in mind that the numbers of machines and trained pilots available for home defence are governed by the more important demands of the various fronts, and it is thus impossible to ensure a sufficiently large concentration of aircraft at every centre of probable attack. That being so, it is always possible for the enemy, who obviously knows as much about our arrangements for meeting aerial attack as we ourselves, to strike quickly at his selected objective and get back before our own defending aircraft can get on the scene in sufficient force to deter him from the attempt. The best we can expect is exactly what happened after the Folkestone raid—that the enemy's raiding squadrons shall be intercepted on their way back and a substantial toll taken of the hostile machines. It may be an unpleasant prospect to contemplate, but of this we may be very sure, that the raid in question was only an experimental affair and that we have to look forward during the coming summer to more incidents of the kind, carried out with larger numbers of machines and with more important objectives than seaside watering-places as the points of attack.

There is no need for an attack of nerves. While, as we say, it is impossible altogether to prevent these forays of the enemy, we have not touched the high-water mark of the possibilities of defence, and our defences are being improved every day. What we have to strive for in this case is not the prevention so much as the cure. The one we cannot effect—the other we can. We can take as an illustration the Zeppelin menace, now to all intents and purposes happily defunct. No one would venture to lay it down that it is impossible for the enemy to carry out a Zeppelin raid on almost any point he likes to select, but what deters him is the almost certain knowledge that, be the raid itself as successful as even he could desire, the practical certainty exists that his airships will never get back. In a word, we cannot prevent

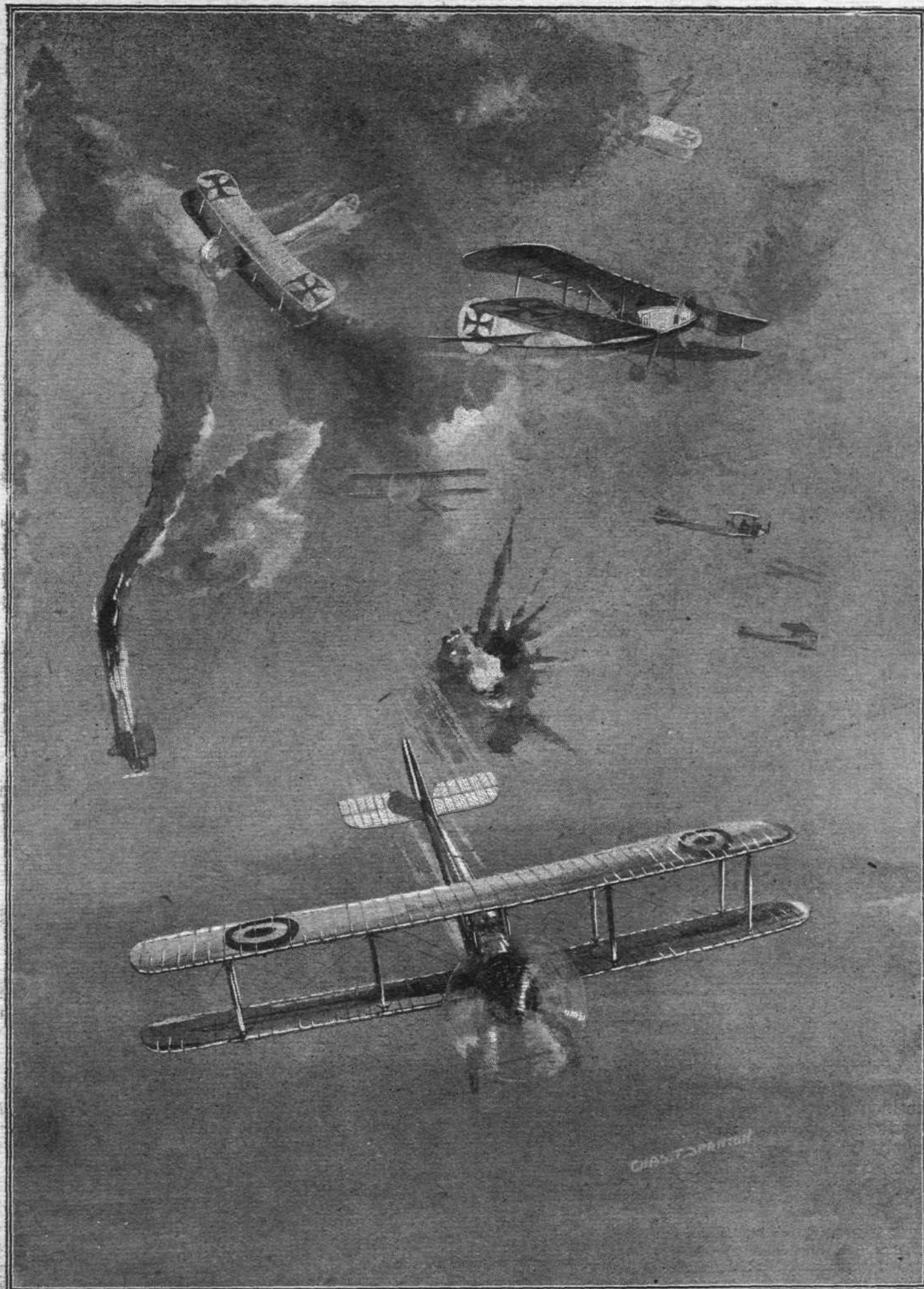
the Germans from raiding our shores with Zeppelins, but what we have done is to cure them of the habit. It may amount to the same thing in the end, but there is an essential difference, after all.

Apart from the perfecting of our home defences, although we were reluctant converts to the gospel of reprisals, we do urge upon the responsible authorities that the best defence against these raids lies in carrying the war into the enemy's country. In the first place, we know the Hun dislikes the measure he is fond of giving to his enemies. That has emerged in the course of the very few reprisal raids we have carried out in Germany. But there is an even more important aspect of "reprisals" than that of the doctrine of an eye for an eye. The Germans justify their raids on us by saying that they achieve a definite military object, in that they compel us to keep at home a large number of aeroplanes and pilots, with guns and munitions that would do more harm, from the enemy point of view, at the front. Proportionately a much larger number of machines are required for defence than for raiding. Moreover, the defence machines are permanently unavailable for the front, whereas a sufficient number can always be detached from active service squadrons for temporary raiding purposes. Now, if German raids on England compel us to keep back from the front machines that would otherwise be available for use there, surly British or Allied raids on Germany would produce the same effect of a corresponding weakening at the front. On that ground alone it would seem that the policy of reprisals is not only justified but absolutely necessary.

There is another lesson of the raid, to which we have already referred in passing. That is the knowledge undoubtedly possessed by the enemy of our own arrangements for defence. It is a crying scandal that at this stage of a war against a powerful and implacable enemy we should allow his nationals, whether they have become naturalised in this country or not, to be loose about the country with every facility for spying out the defects in our armour. Doubtless there are those among our own people who can be bought if the price is high enough, but these we can deal with—in one way only—as they are discovered. But there is no need to wait until the enemy alien is discovered at his tricks. There is only one place for him—behind barbed wire. There we are reasonably certain he is safe. Anywhere else he is a potential danger to the realm, and the sooner this view is impressed on the Government the sooner the enemy's sources of information will dry up.

One more point in connection with this raid, and which equally applies to others, past and future. There certainly seems to be something wrong with our own intelligence departments. Not only do our own people seem to have been ignorant of the fact that the raid was in preparation—for which there is every excuse to be made—but apparently the enemy machines were a considerable time over the south-east of England before the actual attack took place, yet it does not emerge that they were officially seen or that any warning was given. Certainly, no defending machines were up in time to give battle. We do not presume to say where the shoe pinches, though we have a very shrewd idea, but there is evidently something very seriously wrong, and we look to the proper authorities to put it right without delay.





By way of reciprocal help for spotting for them, our gunners at the front now, when suitable, put up a barrage to protect our reconnaissance planes against massed air attacks by the Germans while over their own lines. A correspondent recently reported as follows: "Rather a pretty spectacle was to be witnessed near Gravelle yesterday. One of our aeroplanes had been swooped upon by nine German planes. The British machine got ahead of its pursuers, but this advantage could be maintained only for a short time. A couple of our anti-aircraft batteries thereupon put up a barrage as close as was safe in the wake of the chased plane and followed it along. The effect was very striking, and when one of the enemy machines was seen to nose-dive and then spiral rapidly towards the ground, a confused, far-flung cheer was borne upon the breeze. After this the Huns abandoned the pursuit and our machine landed safely."



**The Future of Commercial Aviation.** It is a curious coincidence that hard upon the interest created by Mr. Holt Thomas' paper on commercial aviation should come the announcement of German activity in schemes for building up aerial services after the war.

Apparently, the idea is to create a huge aerial trust under the auspices of the governments of the Central Alliance. A Bill has been presented to the Reichstag, it is stated, for the inauguration of the "International Air Traffic Co.," which is to link up the partners to the alliance by a network of air-routes. In addition, the Bill is said to formulate a new code of aerial laws, which have been submitted to the several governments for their approval. In the meantime, the Central Powers are losing no time in putting their intentions into practice, since it is stated that the Austrian Aero Club has already started an aerial mail and passenger service between Hamburg and Constantinople, and has been subsidised for the purpose to the extent of £2,000,000.

It may be that these reports are premature. Necessarily, the news comes through neutral sources, which are not conspicuous for the accuracy of their information, but it would be foolish to discard it as utterly without foundation. Beyond a doubt there is a distinct and immediate future for commercial aviation, and we may be very certain that Germany and her Allies are, as fully alive to the fact as we ourselves. Moreover, if we can take our stand on the lessons of the past, it is only to be expected that they will endeavour to assure that, when the end of the war comes and we are free to develop along peaceful lines again, we shall be faced with the accomplished fact of a Germany fully equipped and ready to capture the traffic of the air before we can get ready. We do not say that this will necessarily be so, but it will be as well not to lose sight of the practical certainty that aerial possibilities are recognised in Germany fully as well as here. What we must do is to so order things that Germany shall not get the start at which she aims. The interest has been created now, and what we have to see to is that it is maintained and increased by all the missionary work possible in order that the moment peace is assured we can get straight to work. We cannot afford to be left at the post by anyone—we must be first in the air commercially as well as from the standpoint of military necessity.

As to the possibilities of aircraft for long-distance work, these are sufficiently indicated, not only by the flights that are being made every day by military machines, but by performances which, while they are of the war, are not directly war-flying. For example, taking the reports of the Hamburg-Constantinople service as correct, we have aircraft already carrying out mail and passenger flights of roughly 1,800 miles as the aeroplane flies, and doing it, for all we know to the contrary, quite successfully.

Coming to what we know of, there was the recent flight of a British machine from London to Rome, a distance of 920 miles, with only three stops, to point the moral. This last, we are aware, is not a record flight, but it comes at a most opportune time to drive home the lesson to the man in the street that the aeroplane is good at any time for a thousand miles' flight. When all the records made during the war are available we shall doubtless have all the material we want for making good the case, but in the meantime we have to be content with what evidence we can get. The main thing is that the gospel of commercial aviation must be preached assiduously, every time and all the time, if we are not to be left behind when the real race starts.

## "Air Spying."

In an article under this heading, in a recent issue of the *Daily Mail*, Mr. Winchester raises a point of considerable interest and not a little difficulty. He points out that before the war, although there were a number of well-equipped flying schools in Germany, the German Government were accustomed to send young Huns to England to learn to fly at "the comparatively inefficient English flying schools." He claims that the only possible object was espionage, the result of which was that the Germans were able to compile a very complete aerial photographic survey of different parts of the British Isles.

As we have said, the points that are raised by the statements of the writer in question are knotty ones. So far as the past is concerned, the damage, whatever it was, has been done and there is no help for it. When we come to deal with the future, the subject cannot be so lightly dismissed. We are out to develop aerial navigation, and if we are seriously going to set about the task it really looks as though we should have to put up with the risks of espionage, remembering that it is a poor rule that does not work both ways, and that we have one more potent argument for being supreme in the air. It does not matter what information or what photographic surveys the potential enemy may possess, he will not attack unless he knows he has at least a reasonable prospect of success. What we must aim at is a measure of strength in the air that will put the probability of such success out of court, and then his information will be at a corresponding discount. It is either that or the adoption of the impossible gospel according to Mr. Prevost Battersby and prohibit all flying. We might, it is true, prohibit for a term of years the navigation of our air by pilots of present enemy nationalities, but that would not do away with the danger, because whatever country—including our own—desired information which could only be obtained from the air and was prepared to pay for it, it would be available. To our way of thinking there is only the one way out, and that we have sufficiently indicated.

## "X" AIRCRAFT RAIDS.

### "X 62" Raid (June 5th).

THE following *communiqués* were issued by the Field-Marshal Commanding-in-Chief, Home Forces, on June 5th:—  
7.30 p.m.

"An aeroplane raid is now in progress over the estuary of the River Thames. The enemy have dropped bombs over the adjoining district of Essex and Kent. No further details are yet to hand. Up to the present one hostile machine has been reported as having been brought down."

11 p.m.

"The aeroplane raid this evening was carried out by a

squadron of about 16 aeroplanes. These aeroplanes came in over the Essex coast about 6.15 p.m. They dropped some bombs in the country and small towns in Essex, and then proceeded to attack the naval establishment in the Medway. A considerable number of bombs were dropped and a certain amount of damage was done to house property, but the damage done to naval and military establishments is practically negligible. The raiding aeroplanes were engaged by gunfire and pursued by aircraft; after having lost two machines they made off to sea. The casualties so far reported are: Killed, 2; dangerously wounded, 2; wounded, 27."



## CONSTRUCTIONAL DETAILS.—XVII.\*

IN our previous instalments of constructional details the subject of mounting and cowling air-cooled engines has been dealt with, the three main types—the rotary, the radial, and the Vee—having been included in this series. It now remains to deal with the mounting and housing of water-cooled engines. Owing to the restrictions imposed by the condition of war, we are, at present, precluded from making any reference to much that has been and is being done in the way of mounting and housing water-cooled engines on British and Allied aeroplanes, but when peace shall again be declared we may revert to this subject in the form of constructional details as developed since August 4th, 1914.

Before commencing to describe in detail how individual firms carry out the mounting and housing of water-cooled engines, it may be of interest to examine what are the problems to be solved and the conditions affecting them. Generally speaking, water-cooled engines may be divided into two groups, the vertical and the Vee. There is a third group, it is true, *i.e.* the radial, but as the latter is not in such general use as the other two, and as, moreover, the mounting of it is very similar to that of an air-cooled radial, it forms an exception rather than a rule when it comes to considering methods of mounting and housing.

As regards the vertical engine, this consists of sometimes four, more often of six, and occasionally of eight or more, cylinders placed one behind the other in a straight line on top of a common crank case. It will readily be seen that this cylinder arrangement makes for a somewhat long engine, especially when the number of cylinders exceeds six, necessitating a long engine bed, which must be very rigid if misalignment is to be avoided. Water-cooled engines have been built in which the support of the engine took the form of transverse members running through the crank case from side to side, but in the majority of cases the two sides of the crank case are provided with horizontal flanges running the whole length of the engine, or else with brackets projecting out from the sides at intervals, designed to be bolted to longitudinal engine beds resting on the body structure of the aeroplane.

The problem that now faces the designer is to provide a structure which, while rigid enough to ensure that the engine itself is not subjected to any bending stresses, is sufficiently flexible to transmit the vibration of the engine to the mounting and yet damp out these vibrations before they reach the structure of the aeroplane *fuselage* proper. In this connection it should be borne in mind that, apart from such minor considerations as vibration, which is or should be reduced to a minimum in a modern engine, there are two main loads to be considered. One is the weight of the engine, which is, of course, always acting, while

the other is the thrust or pull of the air screw, acting only when the engine is running and varying from maximum when the engine is going "all out," through minimum when the engine is throttled right down, to a reverse thrust when the machine is diving and the air pressure on the back of the air screw is driving the engine against internal friction. It will thus be seen that these two main loads give one vertical component which is constant and one horizontal component varying in magnitude and direction. As a matter of fact, it is not absolutely correct to state that the vertical component is always constant, since during a vertical nose dive with engine running the weight of the engine is acting along the same line as the thrust, both tending to pull the engine out of the *fuselage* in a forward direction. For ordinary horizontal flight, however, the two main loads may be said to consist of a vertical and a horizontal component.

In normal flight the resultant of these two components will have a forward inclination of approximately 45 degrees. That this is so will be clear from a brief consideration. Taking the weight of the average water-cooled engine as 5 lbs. per horse-power—this is probably slightly too high a figure for a modern engine, but will serve to illustrate our point—and the thrust obtained with a propeller of average efficiency as also being about 5 lbs. per horse-power—a very efficient modern air screw may exceed this figure—it will be seen that the vertical and horizontal components are approximately equal in magnitude, and that therefore the resultant will have an inclination of approximately 45 degrees. For a 100 h.p. engine weighing 5 lbs. per horse-power, and giving a thrust of 5 lbs. per horse-power, the resultant will therefore be about 700 lbs. acting at an angle of 45 degrees.

During a vertical dive it has already been pointed out that the weight component will be parallel to the thrust component, and for the same engine the pull tending to tear it out of the *fuselage* would, therefore, be about 1,000 lbs. or twice the weight of the engine. When diving with engine cut out the thrust would be acting against the weight during a vertical dive, thus reducing the forward pull being exerted on the engine bearers. In the foregoing sufficient has been said to indicate the considerations that have to be taken into account when designing a suitable engine mounting, and we will now proceed to describe the manner in which three firms are tackling the problem.

In the Albatros biplanes there are two longitudinal ash engine bearers, to which the brackets on the side of the engine are bolted. These two bearers are in turn supported by four transverse members connecting them to the upper and lower longitudinals of the *fuselage*. The front one of these takes the form of a pressed steel frame lightened in places and forming a capping plate over the ends of the four longitudinals, which converge somewhat at this point. The next support is formed by a ply-wood member cut out in places for the sake of lightness. The ply-wood member has a thickness of 20 mm. From the point on the lower longitudinals of the body where are attached the front chassis struts two supporting transverse members radiate. One of these, which is of the same dimensions and general construction as the preceding one, slopes forward, while the other, supporting the rear end of the engine, has a backward slope. The latter is somewhat stouter than the other

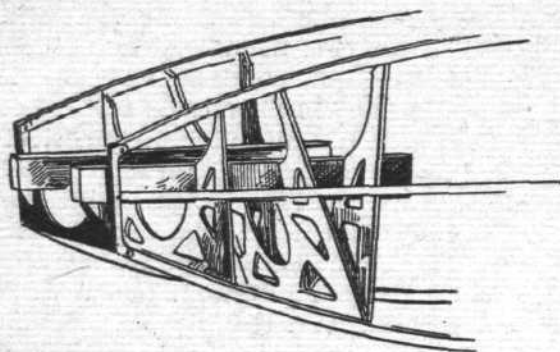
\* Previous sets of sketches in this series have appeared as follows:—

	1915.		1915.
Strut sockets .. ..	Sep. 10	Vee type undercarriages ..	Nov. 12
" " " " .. ..	" 17	Wheel undercarriages ..	" 19
" " " " .. ..	" 24		
" connections, &c. ..	Oct. 1		
Wing spar sections ..	" 8	Engine mountings ..	Jan. 6
Streamline strut sections ..	" 15	" " " " ..	Apl. 27
Double-skid undercarriages ..	" 22	" " " " ..	June 8
Single " " " " ..	" 29	" " " " ..	Sept. 14
Vee type undercarriages ..	Nov. 5	" " " " ..	Dec. 21

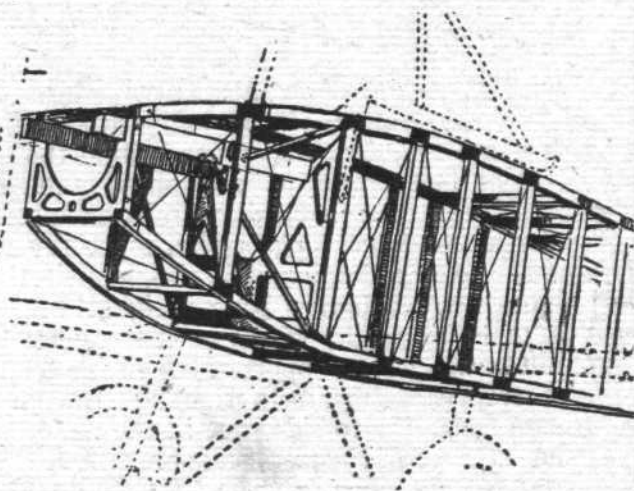
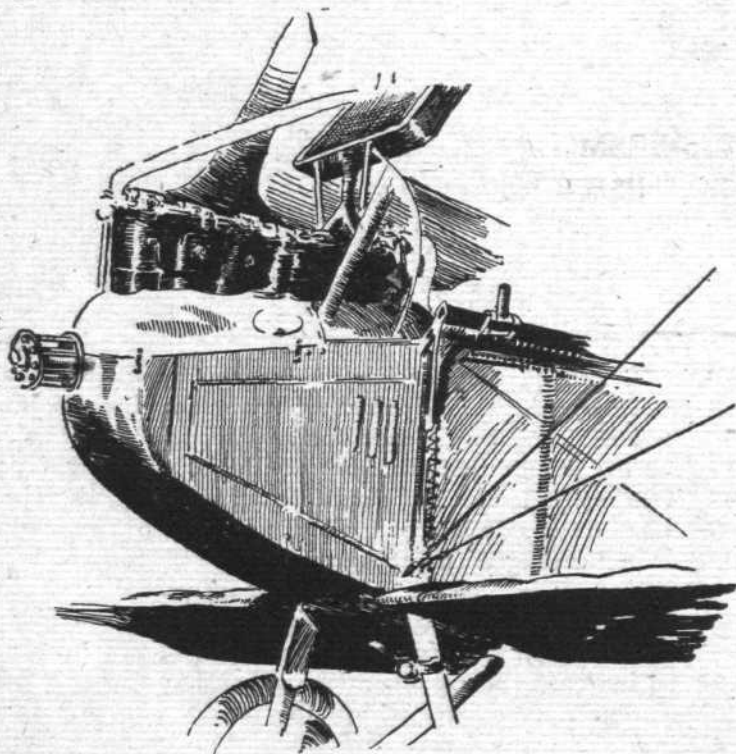
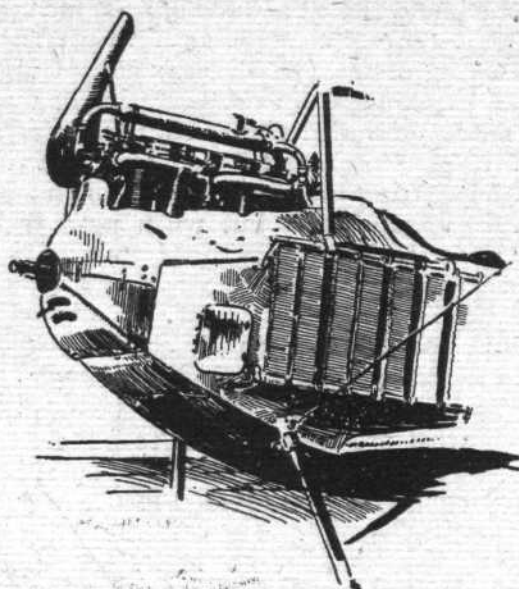
Any of these back numbers can be obtained from "FLIGHT" Office, 44, St. Martin's Lane—1915 copies price 9½d. each post free, and 1916 copies 6½d. post free.



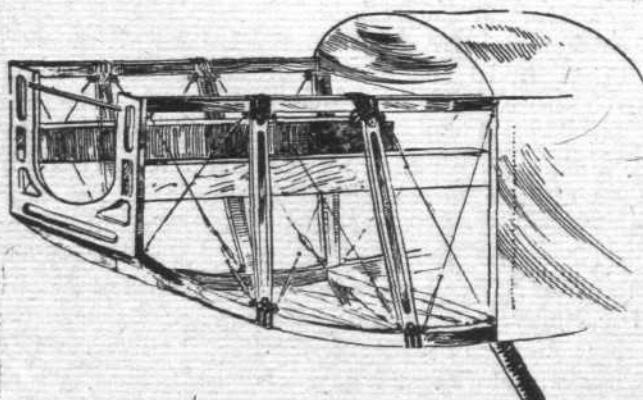
**CONSTRUCTIONAL DETAILS.—XVII.**



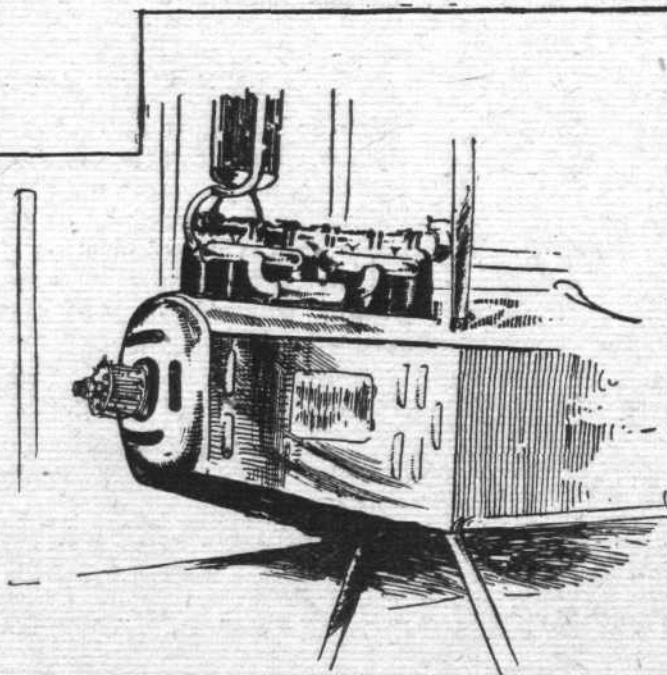
**ALBATROS**



**AVIATIK**



**STANDARD**



Mounting and housing of vertical water-cooled engines.



ply-wood members, being 25 mm. instead of 20 mm. thick. Reference to the drawing will, we think, make the arrangement clear.

In the Aviatik biplane the same two longitudinal ash bearers are met with, but the transverse members supporting these are slightly different from those of the Albatros, apart from being only three in number as against the four supports of the former. The front support is as usual a pressed steel frame forming a capping plate over the end of the *fuselage*, and the remaining two are of the ply-wood variety. That in the middle consists of two pieces, one on each side, while the rear one, which is very substantial, runs right across the bottom of the *fuselage*, but is divided at the top to afford space for the crank case of the engine. The longitudinal bracing of the engine, which was assisted in the case of the Albatros by placing the two rear supports at an angle and meeting at a point at the bottom, is effected in the Aviatik by round steel tubes running from the middle of the two longitudinal engine bearers to the top and bottom of the *fuselage*.

In the American Standard biplane there are, as our sketches show, only two supports for the longitudinal ash bearers. The front one is formed by a heavy gauge steel frame, with openings formed for lightness, the edges of which, as in the German machines, are turned in to stiffen the plate against buckling. The upper portion of the plate is left open to accommodate

the nose of the engine, and a detachable steel bar is run across the top. The rear support is formed by the dash board in front of the passenger's seat, and in the absence of any support in the centre one would expect a certain amount of "whip" in the longitudinal bearers. Whether this has been found so in practice we have not been able to ascertain.

In the three machines dealt with here the radiator is not fitted in the nose of the body, which has therefore, in view of the fact that the engine was in each instance of the vertical type, been capable of being kept very narrow in front. Usually a rounded nose-piece of aluminium is fitted over the front engine plate to give a better appearance and also to reduce somewhat the resistance of what would otherwise be a flat plate normal to the wind. As regards the housing of the engines with this type of construction, it will be seen that this is confined to enclosing the crank case and lower portion of the cylinders, leaving the upper part of them exposed. As regards getting rid of the exhaust gases, there are two or three methods in general use. One consists in having a collector pipe running down under the body or along the side of the body. Another method, which is largely favoured by German designers, is to have a big combined exhaust collector and silencer projecting upwards from the engine, carrying the exhaust gases away above the top plane. Which is preferable is largely a matter of opinion, as both arrangements have advantages and drawbacks.

## ■   ■   ■   ■ HONOURS.

### Birthday Honours.

THE Honours announced on June 4th include the following:—

The King has been graciously pleased, on the occasion of His Majesty's birthday, to give directions for the following appointments to the Most Distinguished Order of Saint Michael and Saint George, in recognition of valuable services in connection with the war:—

Major and Bt. Lt.-Col. (Temp. Brig.-Gen.) J. M. SALMOND, D.S.O., R. Lancs. and R.F.C.  
Major (Temp. Lt.-Col.) G. LIVINGSTONE, London and R.F.C.

His Majesty the King has been graciously pleased to approve of the following rewards for distinguished service in the field, dated June 3rd, 1917:—

#### *To be Brevet Lieut.-Colonel.*

Major (Temp. Lt.-Col.) G. W. P. DAWES, D.S.O., R. Berks. R., and R.F.C.

His Majesty the King has been graciously pleased to approve of the undermentioned rewards for distinguished service in the field:—

#### *To be Companions of the Distinguished Service Order.*

Temp. Capt. W. W. BENN, Yeo. (attd. R.N.A.S.).  
Capt. (Temp. Lt.-Col.) the Hon. J. D. BOYLE, Rif. Brig. and R.F.C.

Lt. (Temp. Major) R. A. COOPER, Yeo. and R.F.C. (late Capt. D. G.).

Capt. (Temp. Major) L. F. R. FELL, R.F.C. (S.R.).

Major A. L. GODMAN, York. R. and R.F.C.

Capt. (Temp. Major) J. H. A. LANDON, Essex R., and R.F.C.

Capt. (Temp. Lt.-Col.) R. LORAIN, M.C., R.F.C. (S.R.).

Capt. and Bt.-Major (Temp. Brig.-Gen.) G. S. SHEPARD, M.C., R. Fus. (attd. R.F.C.).

Capt. (Temp. Major) J. VALENTINE, R.F.C. (S.R.).

Capt. (Temp. Lt.-Col.) P. K. WISE, R. War. R. and R.F.C.

#### *Bar to Military Cross.*

T./Capt. P. C. SHERREN, Can. Local Forces and R.F.C.

#### *Military Cross.*

T./Capt. G. B. A. BAKER, R. Berks. R. and R.F.C.

2nd Lieut. R. E. BUCKINGHAM, R.F.C. (S.R.).

T./Capt. W. W. CAREY-THOMAS, Gen. List and R.F.C.

T./Lieut. F. O. CANE, Rif. Bge. and R.F.C.

T./Capt. J. CLISDAL, Gen. List and R.F.C.

T./Capt. E. J. HENDERSON, R.F.C. (S.R.).

T./Capt. C. HOLLAND, R.F.C. (S.R.).

T./2nd Lieut. P. C. HOLLINGSWORTH, Gen. List and R.F.C.

2nd Lieut. E. KING, K.O.S.B. (S.R.), attd. R.F.C.

2nd Lt. M. J. J. G. MARE-MONTEBAULT, Yeo. and R.F.C.

T./Capt. H. M. MASSEY, N. and D. R. and R.F.C.

T./Capt. H. MEINTJES, Gen. List and R.F.C.

T./Lieut. F. G. SAUNDERS, Gen. List and R.F.C.

2nd Lieut. F. H. B. SELOUS, R.W. Surr. R. and R.F.C.

T./Lieut. (actg. Flight-Comdr.) E. R. WILKINSON, Gen. List and R.F.C.

T./Capt. H. A. WOOD, R.F.C. (S.R.).

Lieut. J. C. F. OWEN, Can. Local Forces and R.F.C.

Upon Dr. RICHARD TETLEY GLAZEBROOK, C.B., F.R.S., Director of the National Physical Laboratory, His Majesty has conferred the honour of knighthood.

### French Honours.

It was announced in a supplement to the *London Gazette* issued on June 2nd that the following decorations and medals have been presented by the President of the French Republic for distinguished services rendered during the course of the campaign:—

#### *LEGION OF HONOUR.*

##### *Croix de Chevalier.*

Lt. (Temp. Capt.) A. BALL, D.S.O., M.C., Notts. and Derby, and R.F.C.

Capt. the Hon. M. BARING, R.F.C. (S.R.).

Sqdn. Commander G. R. BROMET, D.S.O., R.N.A.S.

Capt. (Temp. Lt.-Col.) R. C. DONALDSON-HUDSON, D.S.O., T.F. Res. and R.F.C.

Temp. Major A. C. B. GEDDES, M.C., R.F.C.

##### *Croix de Guerre.*

Temp. Lt. (Temp. Capt.) G. W. M. GREEN, M.C., R.F.C.

Temp. Capt. F. M. HICKS, R.F.C.

2nd Lieut. R. E. BUCKINGHAM, R.F.C. (S.R.).

2nd Lieut. C. T. REPTON, Hrs., attd. R.F.C.

### The Air Services at the Investiture.

At the public investiture by the King in Hyde Park on June 2nd the recipients of honours included the following:—

#### *Military Cross and Bar.*

Capt. HUGH ROY, R. Inniskilling F. and R.F.C.

#### *Military Cross.*

Capt. EDWIN BENBOW, R.F.A. and R.F.C.

#### *Distinguished Service Medal.*

Acting Air-Mech. 1st Class WALTER BUNCE.

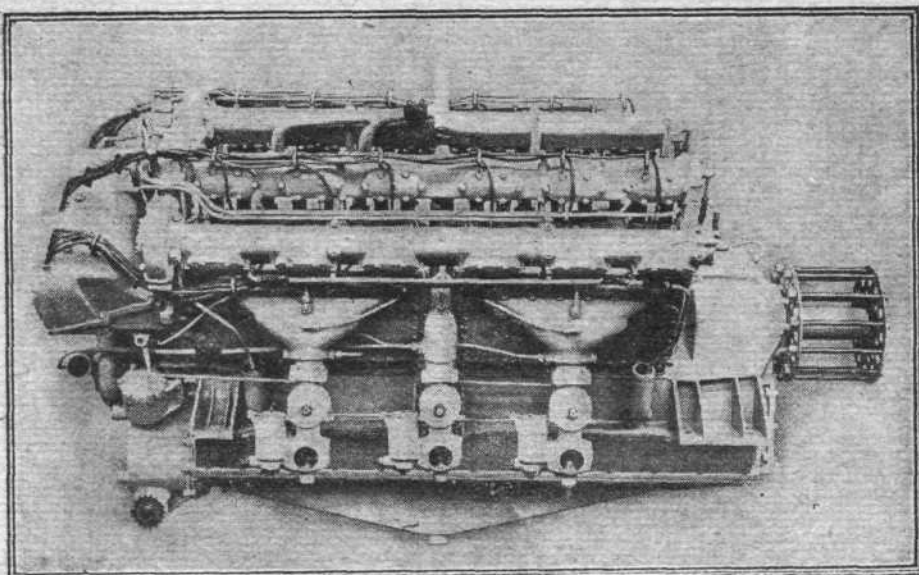
#### *Victoria Cross.*

Mrs. LILIAN MOTTERSHEAD, widow of Sergt. THOMAS MOTTERSHEAD, V.C., R.F.C.

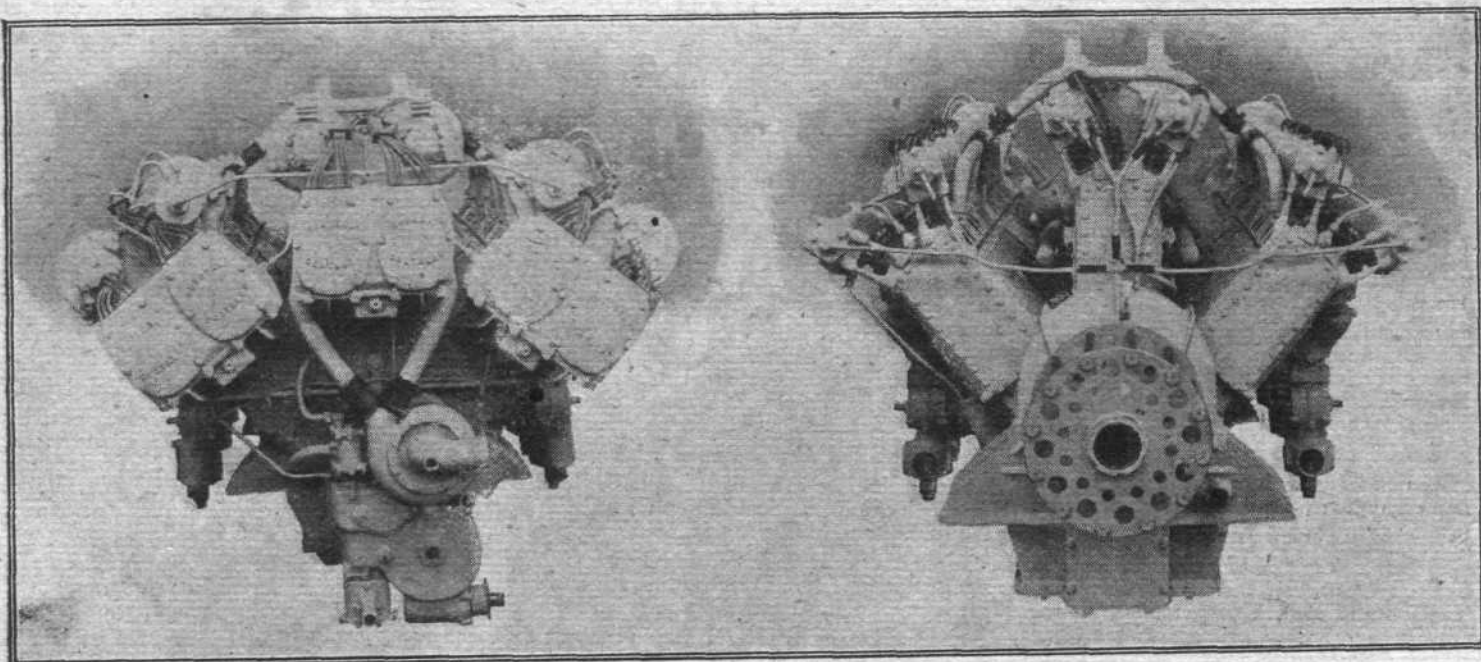


# THE SUNBEAM-COATALEN ENGINES.

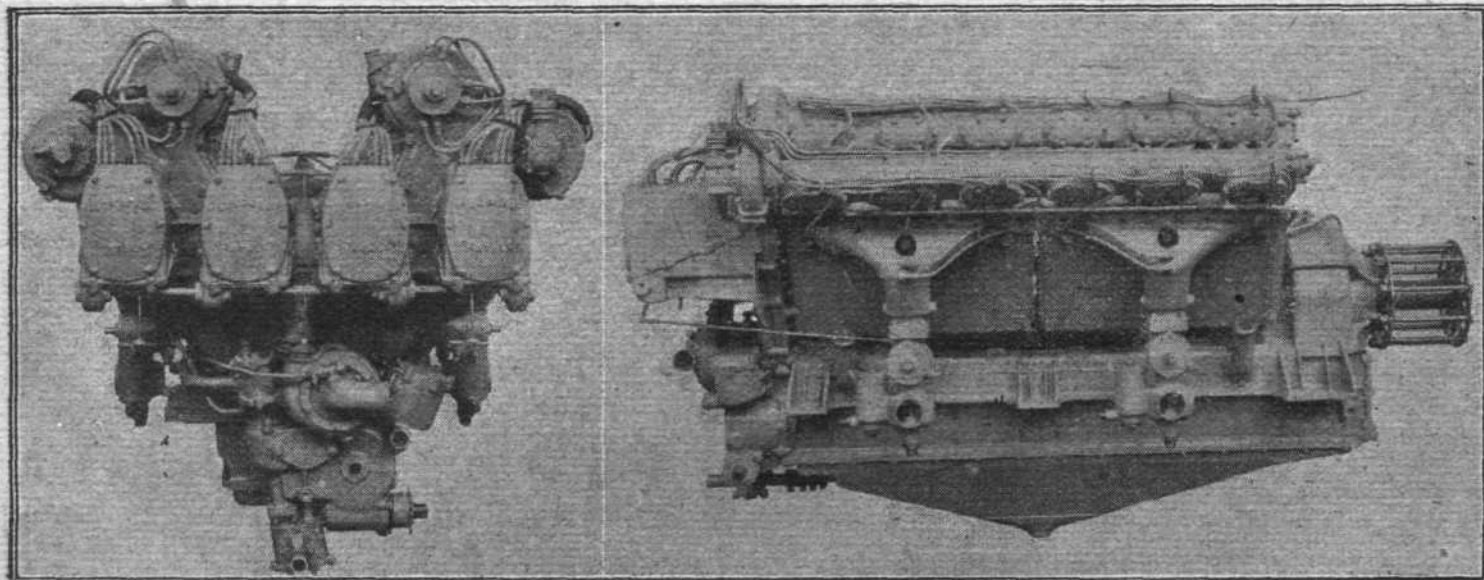
By way of supplementing the very practical paper on "Aircraft Engine Design," read by Mr. Louis Coatalen before the Aeronautical Society a week or so back, and reproduced in full in "FLIGHT" for May 17th and 24th, we are now enabled to reproduce some views of the latest types of Sunbeam engines, evolved for work on Air Service machines. Thus, one set illustrates the 6-cyl. 170 h.p. Sunbeam with the cylinders in one line, an arrangement which provides a very narrow engine with a minimum resistance and suitable for use on multiple engine machines; another shows the 12-cyl. 350 h.p. Sunbeam V type engine which has done splendid work on seaplanes; while in the third set is seen the most interesting of all, the 18-cyl. 475 h.p. Sunbeam with



The 18-cyl. Sunbeam-Coatalen engine, as seen from the side.

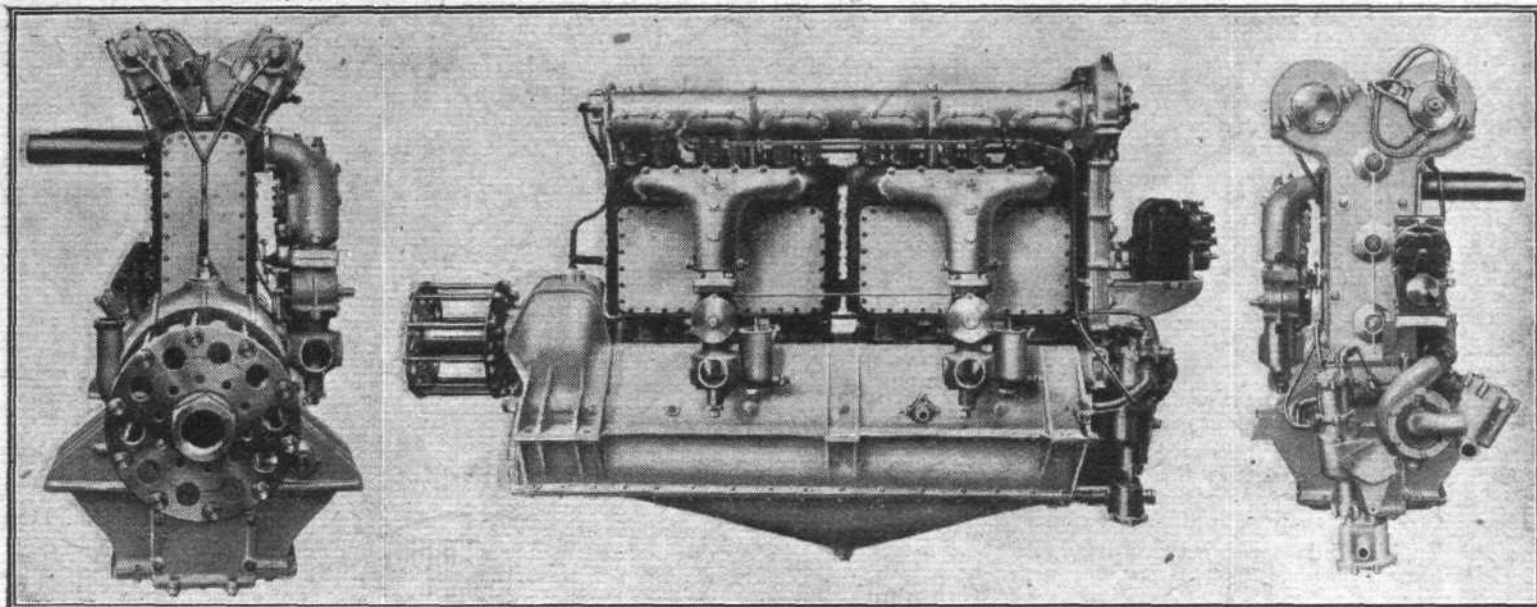


Views from each end of the 475 b.h.p. 18-cyl. Sunbeam-Coatalen engine.



Views from the end and side of the 350 b.h.p. 12-cyl. Sunbeam-Coatalen engine.





Three views of the 170 b.h.p. 6-cyl. Sunbeam-Coatalen aircraft engine.

the cylinders in three banks of six, all working on a common crankshaft.

It will be observed that the general principles of design are common to all three types, and, as pointed out by Mr. Louis Coatalen in his paper, they are very largely the outcome of his extensive experience with racing cars. Thus in each case overhead valves are used, there are two inlet valves and two exhaust valves for each cylinder, and two camshafts for each bank of cylinders; there is one carburettor for each group of three cylinders, and there are duplicate ignition systems.

In the case of the 18-cyl. engine there are no less than six carburettors and six magnetos. Each magneto is enclosed, and each cylinder is furnished with two sparks from independent magnetos. Shortness of crankshaft, therefore of engine length, and absence of vibration are achieved by the linking of the connecting rods. Three cylinders work on one crankpin, the central connecting rod being the master one to which the outer ones are linked. In consequence of this arrangement the piston travel in the case of the central row of cylinders is 160 mm.,

while the stroke of the pistons in the two outer rows of cylinders is 168 mm.

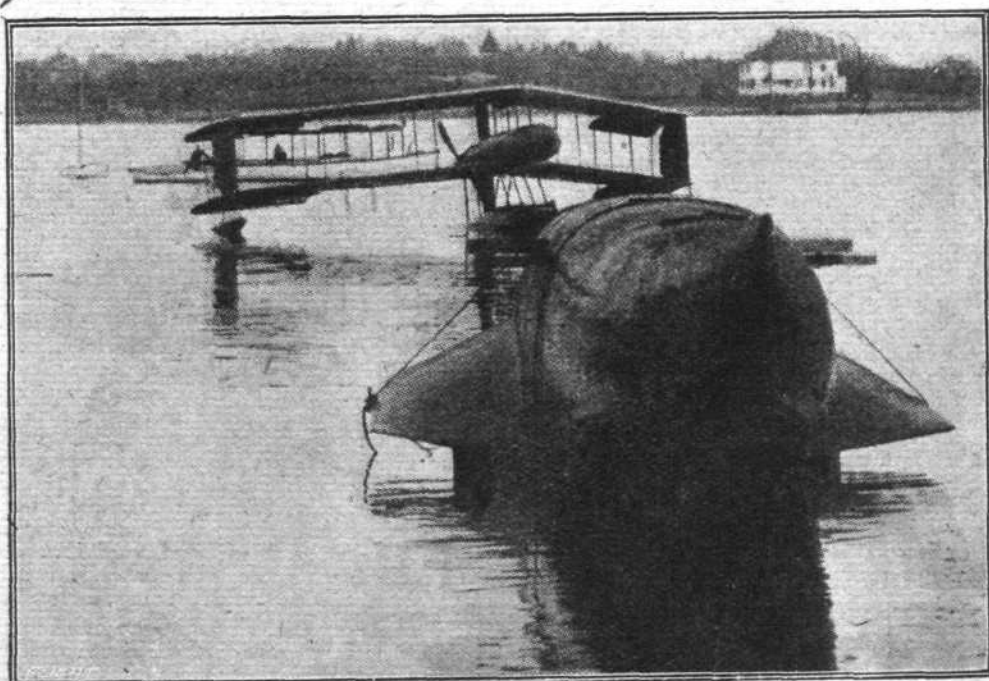
The camshafts are lubricated by low pressure, and are operated through a train of enclosed spur wheels situated at the magneto end of the machine. All the engines illustrated have the crankcase and nose-piece cast in one, an arrangement which not only has the advantage of lightness and proportionately greater rigidity, but also has a great deal to commend it on the score of accessibility and so forth. The engine base is of the dry sump type in combination with a compound pump at the bottom, a scheme which Mr. Louis Coatalen claims has a great many advantages.

To Mr. Louis Coatalen the thanks of this country are due for the great amount of work he has accomplished, and the original thought he has brought to bear in connection with the highly important question of providing engines for aircraft. To this must be added a word of appreciation of the foresight and public spirit of the Sunbeam Motor Car Co., Ltd., in facilitating the carrying out of the great amount of necessary experimental and research work, which has entailed a very large expenditure of money.



A large flying boat hull, built by the Burgess Co., of Marblehead, Mass., U.S.A. In the background is a Burgess-Dunne seaplane.

*Courtesy of "Aerial Age."*





# ROYAL AERO CLUB OF THE U.K.

## OFFICIAL NOTICES TO MEMBERS.

### SPECIAL COMMITTEE MEETING.

A SPECIAL MEETING of The Committee was held on Monday last, the 4th inst., when there were present:—The Duke of Atholl, M.V.O., D.S.O., in the Chair, Lieut.-Col. W. D. Beatty, R.E., Brig.-Gen. W. S. Brancker, R.F.A., Col. Sir Capel Holden, K.C.B., F.R.S., Wing-Commander A. M. Longmore, R.N., Wing-Commander Alec Ogilvie, R.N., Lieut.-Comdr. H. E. Perrin, R.N.V.R. (in attendance) and the Assistant Secretary.

**Election of Members.**—The following New Members were elected:—

John Frederick Atkinson.  
Lieut. Francis Jack Chown, R.F.C.  
Lieut. John Sloane Anderson, R.F.C.  
Alfred Edward Broomhall.  
Francis Joseph Delves.  
Thomas Stanley Fenton.  
Flight-Commander George Hind Jackson, R.N.  
Lieut. Edward Raylton Joicey (9th Lancers).  
Flight-Lieut. Ian Macdonald, R.N.  
Capt. Gyles MacKrell, R.F.C.  
Bernard Metts.  
Squadron-Commander Eric Roper Curzon Nanson, R.N.  
Lieut. W. Mortimer-Phelan, R.F.C.  
Capt. Roy Cecil Philipps.  
Arthur Ruck.  
Mrs. C. R. Samson.  
Alfred George Sayers.  
Lieut. R. Percy Spencer, R.N.V.R.  
David Sydney Stevens.  
Capt. Harold Waring (2/9th Queen Victoria Rifles).  
2nd Lieut. Edward Aldhelm-White (Scots Guards).  
Lieut. Henry Daniel Williams, R.F.C.

**Committee.**—Mr. J. H. Nicholson was appointed a Member of The Committee in accordance with the Resolution passed at the Annual General Meeting on March 23rd, 1915:—

"That the Committee shall have power to co-opt Temporary Members to the Committee during the continuance of the War, to hold office until the next Annual General Meeting"

### London to Rome and Back.

AT 6.15 p.m. on May 30th two British aviators arrived at the Centocelle aerodrome, two kilometres outside Rome, having flown from London with stops at Paris, Turin and Pisa. They were warmly received by the British Ambassador and Italian officers, and at 4 p.m. on the following day left on the same biplane for London. The weather on the journey was unfavourable.

### "Strafing the Archies."

SINCE our aerial offensive began early in April the Germans have rushed many anti-aircraft batteries to the Western front in an effort to check the care-free manner with which we cross their line, states the *Daily Telegraph* correspondent at the British Headquarters in France. You can hear them barking all through the day and often far into the night. One of these new batteries, larger and noisier than most of its truculent brothers, incurred the especial disfavour of a certain squadron a few days ago, not that it was doing any particular damage to anything or anybody, but it was just deemed too blatant and noisy to exist any longer. So the squadron flew up one bright afternoon, drew the fire of the battery, then closed in upon it and let go with 124 bombs. There is not much more to be said about that particular family of Archies. British pilots when they get a bit peevish rather like having a go at the guns. When they get tossed about by a too familiar big howitzer shell howling by in the air it is not an uncommon thing for them to hunt down the annoying gun and admonish it to better manners in the convincing lexicon of the Lewis gun.

### Most Successful German Flyers.

THE following is a list, according to the *Frankfurter Zeitung*, of the most successful German flyers, with the number of opponents which they have shot down to May 1st, 1917. Only flyers with more than seven opponents are included in this list:—

Commander Freiherr von Richthofen,\* 52; Lieut. Wolff, 27; Lieut. Schäfer,\* 25; Lieut. Voss,\* 24; Lieut. Bernert, 22; Lieut. Gontermann, 17; Lieut. Freiherr von Richthofen,

The following prices have been fixed for the present by the Committee:—

Bedroom (including Bath) .. ..	5s. each per night.
Breakfast .. ..	2s. 6d.
House Luncheon .. ..	2s. 6d.
House Dinner .. ..	3s. 6d.

### Billiard Room.

The Billiard Room is now open for the use of the Members.

### Flying Services Fund.

Boxes for collecting subscriptions for the Flying Services Fund are now available, and anyone wishing to have a box can obtain the same on application to the Secretary.

### THE FLYING SERVICES FUND administered by

### THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 3, Clifford Street, New Bond Street, London, W. 1.

### Subscriptions.

	£	s.	d.
Total subscriptions received to May 29th, 1917	11,758	14	11
Staff and Workers of Gwynnes, Ltd. (Thirty-ninth contribution) .. ..	11	4	10
Proceeds of a Concert given by the Ratings at the Royal Naval Air Station, Oldbury, Birmingham .. ..	44	0	0
<b>Total, June 5th, 1917 .. ..</b>	<b>11,813</b>	<b>19</b>	<b>9</b>

B. STEVENSON, Assistant Secretary.

3, Clifford Street, New Bond Street, W. 1.

16; 1st Lieut. Berthold,\* 14; Lieut. Dossenbach,\* 14; Prob. Officer Nathanael, 13; 1st Lieut. Buddecke,\* 12; Lieut. Böhme, 12; Lieut. Höndorf, 12; 1st Lieut. Kirmaier, 11; Lieut. von Bülow, 11; Lieut. Pfeiffer, 11; Lieut. Müller, 9; Lieut. Allmenroeder, 9; Prob. Officer Goettsch, 9; 1st Lieut. Schilling, 8; 1st Lieut. Freiherr von Althaus, 8; Lieut. Schulte, 8; Lieut. Schneider, 8.

### Killed in Action.

Captain Boelke,\* 40; Lieut. Frankl,\* 19; Lieut. Wintgens,\* 18; Lieut. Baldamus, 17; 1st Lieut. Immelmann, 15; Corp. Manschott, 12; Corp. Festner, 12; Lieut. Keudel, 11; 1st Lieut. Berr,\* 10; Lieut. Mulzer, 10; Lieut. Theiller, 10; Lieut. Leffers,\* 9; Lieut. Parschau, 8.

\* Signifies received the order "Pour le Mérite."

### Turkish Enterprise Frustrated.

WRITING from "before Gaza" on May 24th, Mr. W. T. Massey says:—

"This morning an aeroplane with three men and explosives came down at Salmena, a few miles from Bir-el-Abd, to attempt to cut our railway and pipe line. The men alighted and were about to place the dynamite in position when our patrol opened a heavy fire. The enemy airmen ran for their machine, leaving all the explosives and implements. Blood trails showed that one man was hit. Not the slightest damage was done to us."

### Turks Bomb Hospitals.

COL. THE HON. GUY WILSON, M.P., writing to the parents of the late Lieut. Leonard Gresham, who was in his battalion, states that Lieut. Gresham had been in hospital only two days, when the Turks carried out an air raid on the hospital, and a bomb exploding in the ward in which Lieut. Gresham was sleeping, he was killed. Col. Wilson remarks: "This systematic bombing of our hospitals by enemy aeroplanes makes one's blood boil. The Turks say they are only retaliating for what we have done, but if we have bombed their hospitals it has only been by mistake, whereas the Turks have made every effort to bomb ours, and have also shelled them."



# Answers to Correspondents.

[As a number of letters reach us signed with initials only, some of which do not give a complete address, we would point out that such communications cannot be dealt with in our columns. Full name and address, which will not be published, must always be given.—Ed.]

## Notice to Correspondents in General.

Applications for commissions in the Royal Naval Air Service should be addressed to the Director of Air Services, Admiralty, S.W. The necessary form and conditions of entry can be obtained from the Secretary of the Admiralty.

Applications for commissions in the Royal Flying Corps should be sent to the Director-General of Military Aeronautics, Hotel Cecil, Strand, W.C.

Those who wish to enlist in the R.N.A.S. should apply to the nearest naval recruiting station or to the R.N.A.S. Drafting Office, Crystal Palace, S.E. Skilled mechanics are taken whatever their army classification, but unskilled men are only taken if they are classified B1, B2, or C1.

Recruiting for the R.F.C. is closed for the time being, and any enquiries should be made to the Officer Commanding, Royal Flying Corps Depot, Farnborough.

Enquiries with regard to appointments in the A.I.D. should be addressed to the Chief Inspector, Aeronautical Inspection Department, Hotel Cecil, W.C. 2.

**R. R.** (London, W. 2).

Of the two diagrams from the N.P.L. Report reproduced in the accompanying illustration the upper represents the wing bracing of a biplane, and is known as a space diagram. The lower diagram represents the forces in the various members indicated in the space diagram, and is generally termed a stress diagram. The method of lettering the space diagram may appear somewhat confusing at first, but is really quite simple once it is understood. By this method, which is known as Bow's notation, the spaces on each side of the line of action of a force are lettered, instead of placing the letters at each end of the line of action of the force. The latter is, however, done in the stress diagram. Thus it will be seen that the force at the joint B<sub>1</sub>, which has the letters *cd* on each side in the space diagram, is represented with the letters

which are known are those at D<sub>1</sub>, C<sub>1</sub>, B<sub>1</sub>, F, G<sub>1</sub>, and H<sub>1</sub>. The forces that have to be found are the tension in the lift wires, the compression or tension in the spars, and the compression in the struts. This is done by constructing the stress diagram in the following manner. On a vertical line set off to some suitable scale, say one inch representing 100 lbs., all the known vertical forces, starting from *a*. In this manner *ab* is set off on the vertical line to represent the force *ab* acting at the joint D<sub>1</sub>; *bc* is set off to represent the force *bc* acting at C<sub>1</sub>, &c. It will be noticed that the forces acting on the joints of the upper wing are set off upwards from *a*, while the forces at H<sub>1</sub> and G<sub>1</sub> on the lower wing are plotted below *a*, as *fa* and *ef*.

When all the known forces have thus been set off on the vertical line, the next step is to find, by the ordinary standard methods of graphic statics, the unknown forces in the other members of the frame. Starting at the point D<sub>1</sub>, the pull in the lift wire joining H<sub>1</sub> and D<sub>1</sub>, and the compression in the spar portion D<sub>1</sub> C<sub>1</sub> are first found. Starting from the point *a* on the vertical line of what is to become the stress diagram, a line is drawn from *a*, parallel to *ag*, the outer lift wire. From the point *b* on the vertical line of the stress diagram another line is drawn horizontal, i.e. parallel to *bg*, the spar portion between D<sub>1</sub> C<sub>1</sub>. Where these two lines intersect is the point *g* in the stress diagram, and the line *ag* represents, to the same scale as that employed in drawing the given vertical forces, the pull in the outer lift wires, while the line *gb* represents, to the same scale, the compression in the spar length D<sub>1</sub> C<sub>1</sub>. The next force to be found is the compression in the outer strut. This is done by drawing a vertical line down from *g* and a horizontal line from the given point *f*. The intersection of these two lines fixes the point *h*, and *gh* represents the compression in the outer inter-plane strut, while *fh* represents the tension in the length H<sub>1</sub> G<sub>1</sub> of the lower spar. In the same manner the point *k* is found by drawing lines from *h* parallel to the line joining G<sub>1</sub> C<sub>1</sub> and *f* from the given point *c* a horizontal line parallel to the length C<sub>1</sub> B<sub>1</sub> of the upper spar. Similarly *kl* and *el* are drawn, fixing the point *l*, and *lm* and *dm*, determining the point *m*. From this point onward the calculations are, we think, very clearly explained in the N.P.L. Report.

**P. C.** (Will.).

The difference in sound under the three headings of your query is easily detected by the ear, although it is difficult to describe. When an aeroplane is flying with its engine running the sound is unmistakable, and may under certain conditions be heard distinctly while the aeroplane itself is out of sight. An aeroplane gliding down with engine just revolving will not usually produce a sound that is audible at any great distance, except during a very steep dive, when the wind rushing past the bracing wires will frequently produce a note resembling a shriek. In machines with more than one engine the sound produced by the engines may be identified by a slight rise and fall in the note. This is caused by the fact that two or more engines will rarely if ever run at absolutely the same speed, and that therefore at one moment the explosions in one engine will occur in the intervals between the explosions in the other, while at another instant the explosions in both engines will occur simultaneously.

**F. H.** Great Yarmouth).

The minimum age is 18 years.

**G. M.** (2nd Lieut. R.F.C.).

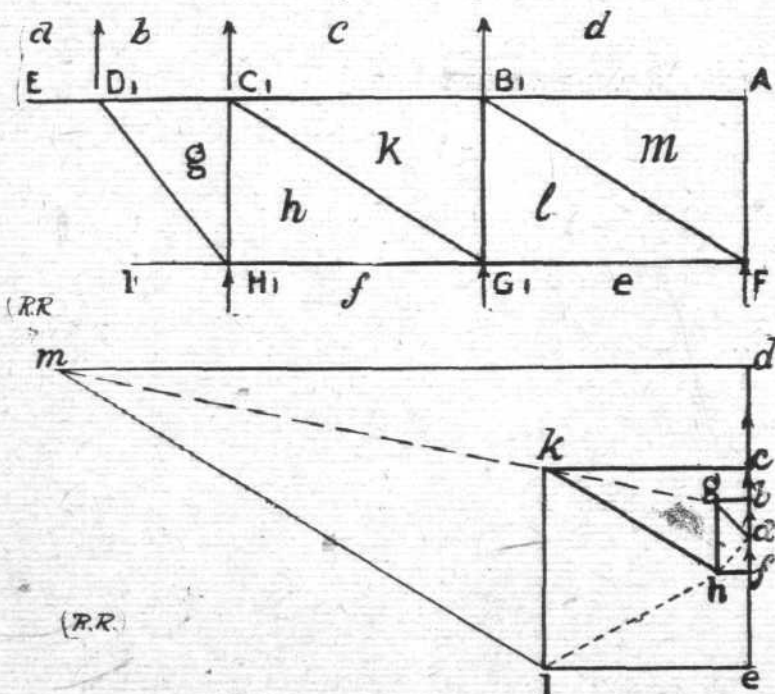
You could obtain a compressed air motor set, we believe, from Mr. Marcel Desoutter at 4, Hanover Street, London, W. 1.

**W. W.** (Stratford-on-Avon).

Col. Cody was killed at Farnborough on August 7th, 1913, while flying the Cody biplane. Capt. G. de Havilland is still alive.

**S. H. B.** (Walthamstow).

It is impossible to say how long you would have to wait, but there is a very long waiting list, we believe. You should be able to get a list of the kit from the R.F.C. headquarters.



*cd* at its ends in the stress diagram. The same applies to the other forces.

The procedure of finding the force in each of the members of the frame is as follows: A front elevation of the wings of the biplane is drawn out to scale as in the upper diagram. The bending moments and reactions having been calculated by the R.A.F. or other methods, it will be seen that the forces



## THE ROLL OF HONOUR.

Reported by the Admiralty:—

**Previously reported Missing, now Officially reported Killed in Action.**

Flight-Lieut. H. A. Pailthorpe, R.N.

**Missing.**

Sub-Lieut. C. L. Haines, R.N.V.R.

Flight Sub-Lieut. W. Houston-Stewart, R.N.

**Previously reported Missing, now reported Not Missing.**

Flight Sub-Lieut. H. M. Morris, R.N.

**Previously reported Missing, now Unofficially reported a Prisoner of War.**

Actg. Flight Comdr. R. G. Mack, R.N.

**Previously reported Missing, now reported (Unofficially) Prisoners of War in German hands.**

Sub-Lieut. L. J. Bennett, R.N.V.R.

Flight Lieut. C. Laurence, R.N.

**Previously Unofficially, now Officially, reported a Prisoner of War in Germany.**

Flight Sub-Lieut. Robert K. Slater, R.N.

Reported by the War Office:—

**Killed.**

Lieut. C. G. Brodie, London and R.F.C.

Lieut. J. W. Brown, R.F.A., attd. R.F.C.

Capt. W. L. Clark, R.F.C.

2nd Lieut. H. S. Diment, R.F.C.

2nd Lieut. C. L. Gunnery, R.F.C.

2nd Lieut. W. F. MacDonald, R.F.C.

Lieut. A. McKimmie, R.F.C.

Lieut. F. C. Shackell, A.C.C. and R.F.C.

2nd Lieut. J. P. Stephen, R.F.C.

2nd Lieut. P. J. Wood, Queen's (R.W. Surrey) and R.F.C.

17812 Corpl. R. Edwards, R.F.C.

65934 2nd Air-Mech. B. G. Perrott, R.F.C.

**Previously reported Missing, now reported Killed.**

2nd Lieut. F. L. Carter, E. Surrey, attd. R.F.C.

2nd Lieut. W. S. Spence, R. Scots, attd. R.F.C.

2nd Lieut. W. J. Thuell, R.F.C.

2nd Lieut. O. J. Wade, R.W. Kent, attd. R.F.C.

2nd Lieut. G. Wood, R.F.C.

**Died of Wounds.**

2nd Lieut. C. W. Fidler, A. and S. Hrs. and R.F.C.

Capt. C. H. Jenkins, R. Sussex, attd. R.F.C.

8750 2nd Air-Mech. G. W. Kidney, R.F.C.

**Previously reported Wounded, now reported**

**Died of Wounds.**

2nd Lieut. A. J. Lucas, R.F.C.

**Died.**

43942 2nd Air-Mech. H. Chapman.

**Wounded.**

Lieut. L. W. Allen, R. Warwick and R.F.C.

2nd Lieut. F. H. Austin, R.F.C.

2nd Lieut. J. H. Baring-Gould, Yeo. and R.F.C.

2nd Lieut. E. B. W. Bartlett, R.F.C.

2nd Lieut. W. Birch, R.F.C.

2nd Lieut. E. B. Cogswell, R.F.C.

2nd Lieut. M. B. Cole, R.F.C.

2nd Lieut. R. G. Dalziel, R.F.C.

Capt. J. F. Davison, R.F.C.

2nd Lieut. N. H. England, R.F.C.

2nd Lieut. L. G. Fauvel, R.F.C.

2nd Lieut. F. Fowler, R.F.C.

Lieut. A. G. A. Hodges, N'hampton and R.F.C.

2nd Lieut. W. Howarth, R.F.C.

2nd Lieut. J. T. Johnson, R.F.C.

Lieut. R. E. Johnson, Queen's (R.W. Surrey), attd. R.F.C.

Capt. A. M. Jones, Aust.F.C.

2nd Lieut. E. H. Jones, R.F.C.

Lieut. S. N. S. Kennedy, Bedford, attd. R.F.C.

Lieut. D. W. McLeod, Gordon H., attd. R.F.C.

2nd Lieut. E. A. Mearns, R.F.C.

2nd Lieut. L. L. Morgan, Welsh and R.F.C.

2nd Lieut. J. Mundie, Gordon Hrs. and R.F.C.

Lieut. H. G. P. Okeden, R.F.C.

Lieut. W. O. Phillips, R.F.C.

Lieut. J. C. C. Piggott, Duke of Cornwall's L.I., attd. R.F.C.

Lieut. R. C. Rodger, M.C., R.F.A., attd. R.F.C.

2nd Lieut. A. P. M. Sanders, N'land F., attd. R.F.C.

2nd Lieut. C. G. Stewart, R. Scots F., attd. R.F.C.

**Previously reported Prisoner of War, now reported Wounded and a Prisoner of War in German hands.**

Capt. H. G. Southon, R.F.C.

**Missing.**

Lieut. J. R. Anthony, R. Welsh F. and R.F.C.

2nd Lieut. J. H. Blackall, Newfoundland, attd. R.F.C.

Lieut. C. G. Eccles, R.F.C.

2nd Lieut. F. W. Evans, Middlesex, attd. R.F.C.

Lieut. C. E. French, E. Ontario, attd. R.F.C.

2nd Lieut. J. Gagne, R.F.C.

2nd Lieut. H. T. Garrett, R.F.C.

2nd Lieut. W. Gilchrist, Rifle Brigade, attd. R.F.C.

Lieut. J. H. H. Goodall, York and Lanc. and R.F.C.

Lieut. G. M. Goods, R.F.C.

2nd Lieut. L. Holman, Hussars, attd. R.F.C.

Capt. L. H. Horncastle, M.C., Wilts, attd. R.F.C.

2nd Lieut. T. J. Hudson, R.F.C.

2nd Lieut. R. E. Jeffery, R.F.C.

Lieut. R. A. P. Johns, Hussars, attd. R.F.C.

2nd Lieut. J. Johnstone, R.F.C.

2nd Lieut. R. R. Macintosh, R. Scots F., attd. R.F.C.

Lieut. R. G. Masson, E. Ontario, attd. R.F.C.

2nd Lieut. T. S. Millar, Royal Scots, attd. R.F.C.

2nd Lieut. B. C. Moody, London and R.F.C.

2nd Lieut. C. C. F. Osborn, R.F.C.

2nd Lieut. P. R. Palmer, Leicestershire, attd. R.F.C.

Lieut. L. A. Smith, Can. Gen. List, attd. R.F.C.

2nd Lieut. J. Toogood, R.F.C.

Lieut. W. G. D. Turner, R.F.C.

**Previously reported Missing, now reported Prisoners of War in German hands.**

Lieut. R. P. Baker, British Columbia, attd. R.F.C.

2nd Lieut. H. E. Hervey, M.C., R.F.C.

Capt. M. B. Knowles, London and R.F.C.

2nd Lieut. D. P. McDonald, Cameron H., attd. R.F.C.

**Corrections:**

**Wounded.**

Lieut. E. L. Sellars, Manchester and R.F.C., should read

Lieut. E. L. Sellars, M.C., Manchester, attd. R.E.

Capt. S. P. Smith, A.S.C., should read A.S.C. and R.F.C.

### Raids on Zeebrugge, Ostend, and Bruges.

THE Admiralty have issued the following *communiqués* :—

*June 1st.*

"Several raids were carried out by naval aircraft from Dunkirk in the course of last night (May 31st-June 1st), the objectives being Ostend, Zeebrugge and Bruges.

"Many tons of bombs were dropped on the objectives, with good results. In every case all our machines returned safely."

*June 2nd.*

"An aeroplane attack was made on the enemy aerodrome at St. Denis Westrem yesterday morning, and last night naval aeroplanes and seaplanes attacked the German bases at Zeebrugge, Ostend and Bruges, dropping several tons of explosives."

*June 4th.*

"The Commodore, Dunkirk, reports a bombing attack was carried out on Bruges Dock and Canal during last night with good results."

The following *communiqué* was issued in Paris on June 3rd:—

"On Thursday evening five machines attached to our naval aviation centre at Dunkirk bombarded the enemy's submarine base near Zeebrugge, a squadron of five enemy aeroplanes at Ostend and an aerodrome at Ghistelles. All our machines returned safely."

### Warnings of Air Raids.

At present many places on the South-East Coast have their own system of warnings with regard to air raids, but an endeavour is now being made to secure greater uniformity. In the meantime the Chief Constable of Essex has made arrangements to notify the inhabitants in the principal centres of the approach of aircraft. The warning will consist of three short blasts of a siren followed by continuous blasts for 15 seconds, and this will be kept up for three minutes. All inhabitants are urged for their own safety to seek the nearest possible shelter as soon as the siren is sounded, and under no circumstances to congregate in the streets.



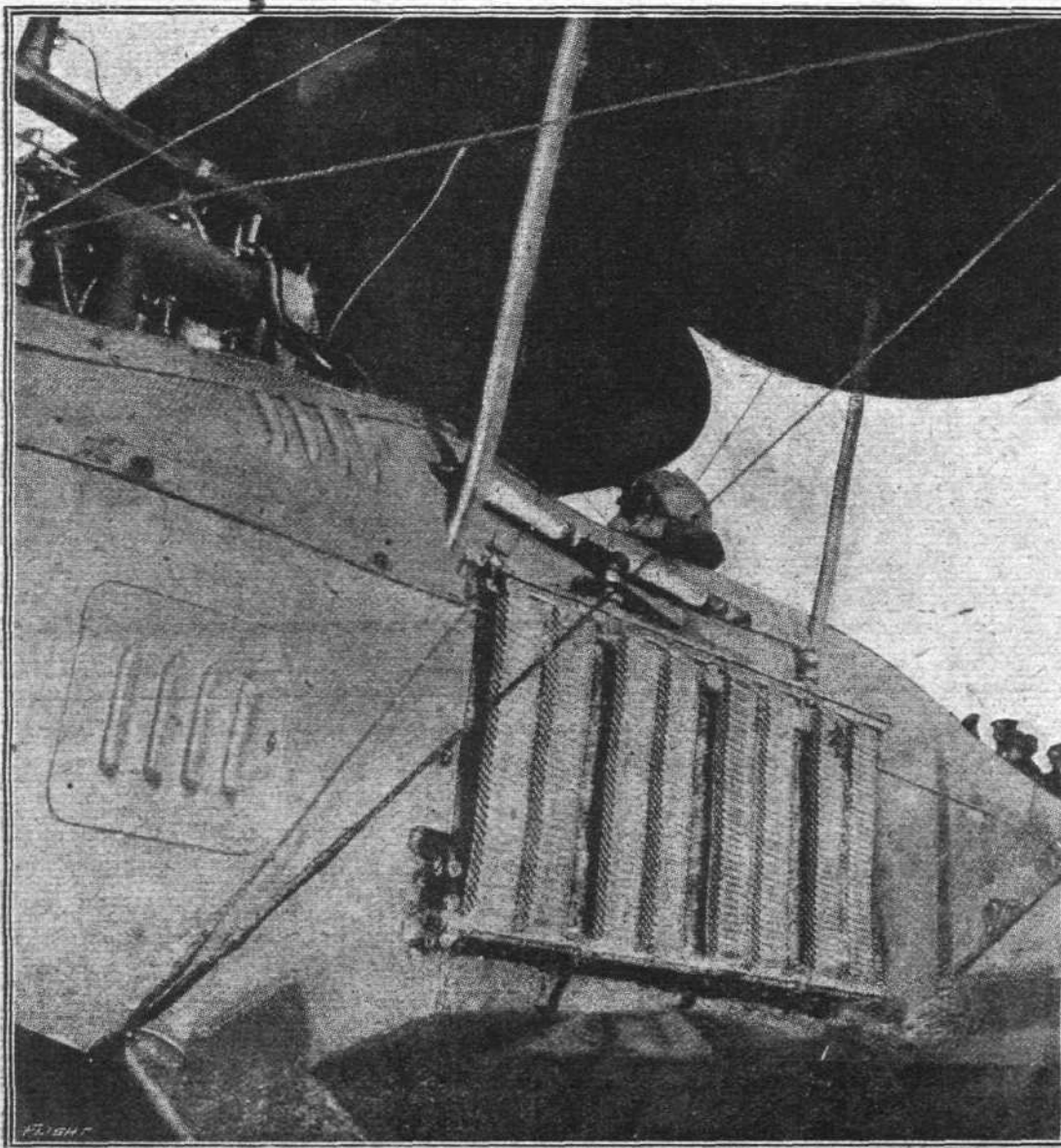
## AIRISMS FROM THE FOUR WINDS.

THE consideration of the future of commercial and utility air navigation is spreading in a highly gratifying way, and many who in the past have had visions of air activity after the war, are preparing to take a hand in popularising the subject. Colonel Lord Montagu of Beaulieu, C.S.I., is one of the most consistent supporters of practical aviation, and, therefore, we welcome a lecture on "The World's Air Routes and Their Regulation," which he will deliver at the Central Hall, Westminster, on Thursday, June 21st, at 8 p.m. Lord Montagu will be glad to send invitations for reserved seats to those interested in aviation and its development, on application to him at 62, Pall Mall, S.W.1, or to the Secretary, Aeronautical Society, 7, Albemarle Street, W.1. A certain number of seats will be thrown open to the public on the night of the lecture. There will be no charge for admission.

LORD MONTAGU will deal at his lecture with some of the problems which must arise from the navigation of the air, such as how aircraft are to be guided on their journeys over land, sea and air, between continents and over continents. He will foreshadow the kind of regulations which must be made to prevent collisions, and what regions of the air are to be considered as private or prohibited areas, and as national and international areas. Some world routes will be considered

in detail, and practical time-tables put forward showing how passengers will arrange their journeys from China, India, or South Africa to England. It is understood that Lord Montagu will also deal with some of the meteorological aspects of flying, and will demonstrate how certain winds will assist regular services all over the world. The lecture will be illustrated by large scale maps, lantern slides and diagrams.

AVIATION has come to the rescue of the objects of the Richmond Royal Horse Show, the abandonment of which has been officially announced. The particular fund which would this year have benefited from the Show was the Royal Society for the Prevention of Cruelty to Animals, which was devoting the receipts to helping British War Horses. Not only will this praiseworthy object be still attained, but the continuity of the Show will not be interrupted, through the generosity and forethought of Mr. J. A. Whitehead, the aircraft constructor, of Richmond, who is already a liberal donor to the Fund for British Horses. Mr. Whitehead has placed at the disposal of the promoters the use of Hanworth Park, Feltham, and has promised other valuable help in organising a great aircraft festival and garden party on Friday and Saturday, August 10th and 11th. The Duke of Teck has accepted the presidency of the festival, and already the project is bringing in active support from many influential quarters.



An interesting photograph of the landing of an enemy machine with pilot badly injured and the observer killed. Our contemporary, *La Guerre Aérienne*, states in regard to the above that on January 10th, 1915, near Villers-Bocage, Sub-Lieut. Eugene Gilbert, the well-known aviator, brought down this Aviatik. The landing was quite normal, the motor having been stopped through a bullet smashing the radiator. When the French soldiers arrived to seize the machine, the observer, Lieut. von Falkenstein, was noticed to be sitting perfectly still, and it was soon realised that he was dead, whilst the pilot, Lieut. Keller, was completely hors de combat through being seriously wounded.

By courtesy of "*La Guerre Aérienne*."



CONGRATULATIONS to Dr. R. T. Glazebrook, C.B., F.R.S., Director of the N.P.L., upon whom His Majesty has conferred the dignity of knighthood.

ALSO to Major-Gen. J. E. Capper, C.B., who becomes a K.C.B., for valuable services rendered in connection with military operations in the field.

FOLLOWING the announcement of the death of Capt. A. Ball, D.S.O., R.F.C., it has been decided to erect a monument to his memory in his native city of Nottingham. At a meeting of the Nottingham City Council last week, the Mayor, Coun. J. E. Pendleton, stated that he proposed to issue a national appeal for funds to erect locally a statue to Capt. Ball's memory. The suggestion was adopted, together with a resolution expressing deep sympathy with the relatives of the intrepid young aviator.

QUITE an interesting collection of aeroplanes is available for acquisition from the Ministry of Munitions. In all there are 116 machines on offer through our advertisement columns, twelve of them being complete with engines. All sorts and kinds are included, and no particular favour is accorded to any one make, without it be the Voisin biplanes, of which there are a matter of 46 on offer, the next numerically on the list being BE2's at 26. According to Col. Fletcher, Inspector of Stores Depôts, to whom, by-the-by, application for further information should be addressed at the Air Board Offices, all the machines are quite air-worthy. They are not "duds," he states, "but reliable machines which come on the market simply because they are taking up valuable storage room which we require for machines of newer types. Many of them, most of them, indeed, are quite new. It is essential that we always keep plenty of the latest machines in reserve, and when these machines are superseded by better types

they are set aside. We can only supply the very best on hand to our men at the front. These machines are out of date, both as regards speed and fighting capacity, and we must have the storage room for our store of the very latest machines with all up-to-date improvements."

THE offering of this little batch of full-sized machines should open out great opportunities for sporting men, aviationally inclined, without someone gets in and bags the whole lot in one tender.

WAS it only a coincidence that the flight from London to Rome, with only three stops, was announced late on the Wednesday night of Mr. Holt Thomas' lecture on "Commercial Aeronautics," or was the news of the aviators' arrival just too late for the telegram from Rome to be read by the lecturer to those who had foregathered to listen to his highly interesting discourse? We wonder. Mr. Holt Thomas carries out all he lays his hand to so thoroughly that the possibility of it not being a coincidence is more than an even chance.

APROPOS the lecture upon "Commercial Aeronautics" by Mr. Holt Thomas, the effect of the evaporation of the moisture on the plates when thrown upon the screen was curious. In the case of the maps defining the direct air-routes to such far-away places as San Francisco, Colombo, Buenos Ayres, Sydney, Constantinople, &c.—not forgetting Timbuctoo—the shadow of the moisture as it gradually passed over the plate and was reflected on the screen, took the curious, but distinct, form of a propeller. Was this an encouraging omen, suggestive of the intervening space being annihilated by means of the air-screw? Again, on the plates showing the relative costs, capitalisation, &c., of this vast and attractive forecast, the vapour shadow took the outline



**A ROYAL FLYING CORPS UNIT.**—A group of the balloon pilot instructors who are in charge of the balloons so frequently seen passing over London. Top row: 2nd Lieut. S. Wilkinson, 2nd Lieut. C. W. Hayne, 2nd Lieut. R. G. Pinfield. Bottom row: Lieut. Baron W. de Ropp, Capt. J. S. D. Berrington, Capt. Arthur Applin, Capt. G. A. Houghton.



of pointed mountains, suggestive of the mountains of difficulties which might well exist in putting into practice the scheme as foretold on paper. And here again came the good omen. Each "mountain" just melted away downwards, between each of the statistical columns of "trouble," until the field was completely free of all shadows. These were the shapes taken, in the main, although there were others into which, perhaps, may have been read further prophetic solutions.

PROBABLY one of the greatest works of the Over-Seas Club has been the very valuable organisation throughout the world which has resulted in the presentation to the Empire of the large fleet of aeroplanes which has gone to swell our air-fighting forces at the front. It is fitting, therefore, that the work in this connection of the organiser, 2nd Lieut. Evelyn Wrench, should be recognised in the Colonial Office list of Birthday Honours by the conferment of Companion of the Order of St. Michael and St. George. Mr. Wrench's energy in addressing between 400 and 500 meetings in Australasia, Canada, and South Africa bore fruit in the rapid gathering of support for the Over-Seas Club, which now numbers nearly 150,000 members. The club has contributed over £150,000 for war aircraft, £226,000 for tobacco for the troops, and £23,000 for the Red Cross.

#### THINGS ONE OF OUR CORRESPONDENTS SAYS HE WOULD LIKE TO KNOW.

Who is the pilot who made a good landing ten feet off the ground at a West of England aerodrome on May 25th?

And why did his passenger enquire if he had mistaken Empire Day for Pancake Day?

And is this the aerodrome where the chief recreation is shooting local rabbits with home-made bows and arrows?

Why has the C.O. at another air station had one end of the mess-room screened off for the benefit of staff officers, and is this in accord with service traditions?

Why did the audience laugh so frequently at Mr. Holt Thomas's exhibition of "movies"?

And was it the Handley Page machine which suffered

from an attack of St. Vitus' Dance, or only the cinematographer?

And was it not strange and eerie to see the shadow of a Zeppelin creeping slowly across many of the pictures and then crumple up as though "Robinsoned"?

Will London-to-Constantinople passengers be content with bowler hats for head-gear, and are two despatch cases for every six persons to be the regulation allowance for luggage?

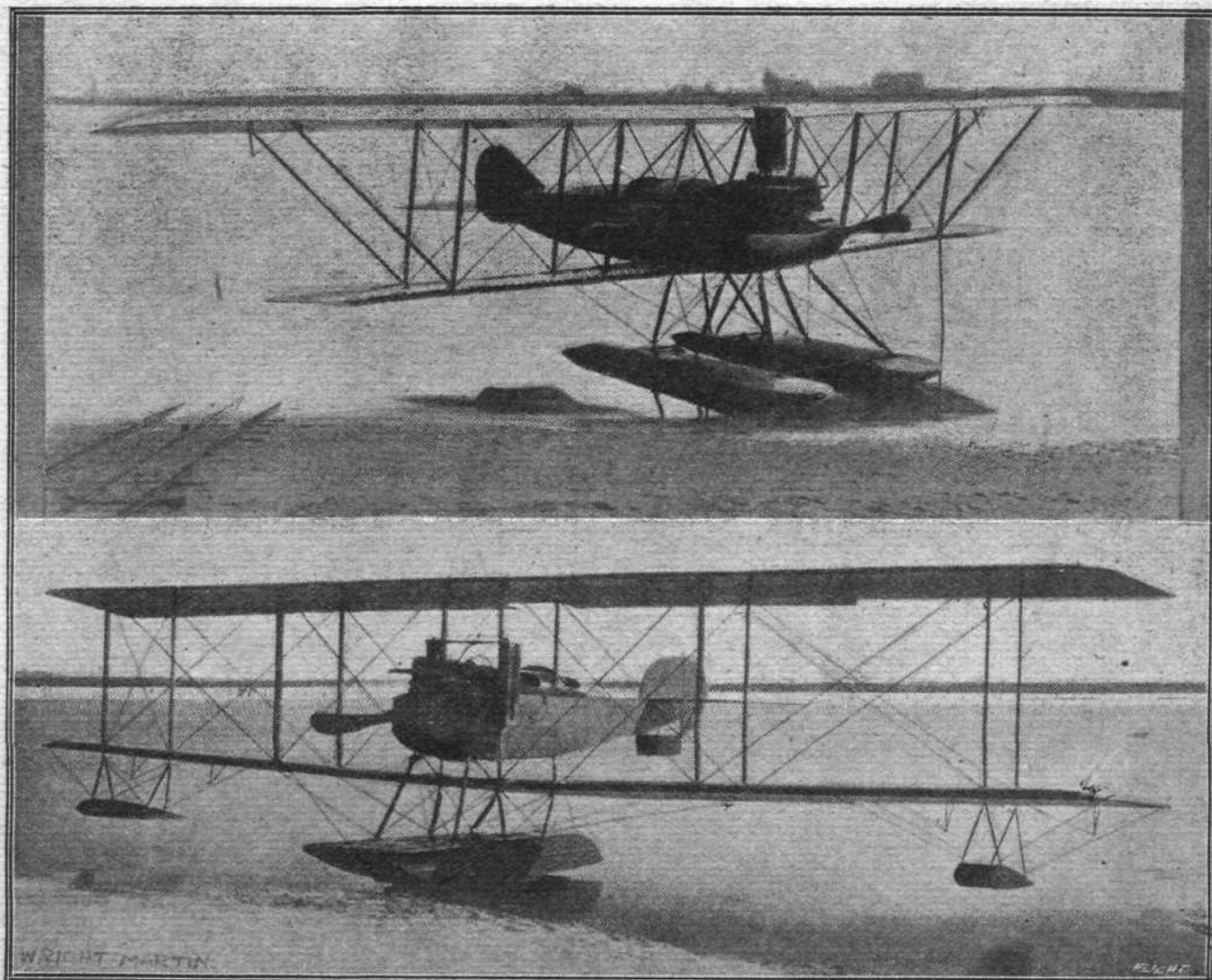
And will the general public be given an opportunity to see these most striking and educative pictures?

Has anyone ever seen a more miscellaneous collection of motor cars and alleged motor cars than the one to be seen outside the Royal Aero Club about meal times?

How does the committee of that club manage to give such excellent meals for the price, and is it true that Lord Devonport has asked if he may join?

"P.B." has re-issued the story of his life by himself, as originally published in *The Imperialist*. A shilling will secure the volume from Imperial House, Hertford. As a record of what a man can crowd into his young life, this book will take some beating. Mr. Pemberton Billing, in a preface, gives voice to his reasons for its re-publication, and assuredly his narrative can leave little for his enemies to unearth and spring upon him as a surprise packet when Parliamentary re-election time gets nigh.

ROYAL Guards on terra firma and in the air at the same time was the order of the day on Saturday last, when the King held his great open-air investiture in Hyde Park. Perhaps it is best to record this little historical item in the programme of the day by quoting the reference in the *Times* to the aviators' presence up above. Were it our description of what took place it might be deemed biased. Thus the *Times*: "About this time there was a stir in the crowd, and heads were turned upwards towards the clouds. There high above the earth, hung four aeroplanes. One says hung, for they were so high that they seemed almost motionless. They flew in perfect formation, now in echelon, now with one machine ahead, two flanking, and one bringing up the



Two Wright-Martin tractor seaplanes. That on the top is the convertible land or water model R, and that below, the larger model S.



rear. The King had clattered up to the ground with an escort of the 1st Life Guards, and now he was still guarded by a Sovereign's escort in the clouds. They weaved slow circles through the clouds, and later far above them. They turned, crossed the City, and came back, keeping a ceaseless watch over the King, and ready to give warning of the approach of any danger in the air."

## "COMMERCIAL AERONAUTICS."

IN the discussion which followed the reading of Mr. Holt Thomas's paper on the above subject, which was given in "FLIGHT" last week, Col. O'Gorman congratulated Mr. Holt Thomas on the able way in which he had dealt with his subject, and he reminded those present that the lecturer, besides being an enthusiast where aviation was concerned, was also a keen business man, and he mentioned how he had been present with him at the first Rheims meeting. He pointed out how vital speed was in the ordinary way, but another way in which speed was important was in the transition period from war to peace flying. If there was any delay in changing over it might easily cost the country £5,000,000. Col. O'Gorman thought that Mr. G. Holt Thomas's figure of £250 per annum for each landing ground would be found to be too high in the light of experience. He also mentioned that four years ago he had been asked to arrange for a service of aeroplanes along a river in one of our distant Colonies, and it was found that it could be worked quite successfully.

Sir John Rees said he knew nothing about aviation, but he knew something about India, and so was in a position to appreciate what he had heard with regard to the possibilities of aeroplane transport. The idea of being able to reach Bagdad in two days, instead of the two months which was often required, appealed to him strongly. He urged the Government not to be "too late" in giving their serious attention to the question with a view to assisting it to the full. The paper opened up a vista of great importance, and every effort should be made to ensure that nothing should be left undone to encourage the movement for the benefit of the Empire.

Mr. F. Handley Page said as he sat and listened to the lecture he could not help likening the audience to those who in Columbus' time had listened to that pioneer navigator explaining his project which led to the discovery of America. He said the fact which stood out was that a load of 6 tons having been carried successfully, it meant that either heavy loads could be carried or that long distances could be covered by aeroplanes. Another thing which was brought out by the pictures was the amount of sociability possible in the roomy cabins on the large machine, while there was ample space in which to stow mails, &c. From his experience he thought that in practice it would be found that wind and weather would not seriously interfere with regular aeroplane services.

Mr. H. White Smith said that although it might be possible to criticise Mr. Holt Thomas's figures, the matter should be regarded in the broadest way. The machines shown on the film could not be bought for £2,500, and the passengers would want to carry more luggage. The capital cost would also go up considerably. They looked to the Government to help to develop the types of machines necessary for carrying out continental and overseas flying, and they looked to the public to support the Government.

### The King and Queen at Hendon.

THE King and Queen, accompanied by Princess Mary, and attended by Commander Sir Charles Cust, R.N., on May 31st motored to Hendon and paid a long visit to the works of the Aircraft Manufacturing Co., Ltd. Their Majesties were received by Major C. S. Paulet, of the Ministry of Munitions; Major Ivan Dobson, Captain R. H. Brand, Mr. G. Holt Thomas, Founder and Chairman; Mr. H. Burroughes, general manager; Mr. G. A. Peck, assistant general manager; Captain S. W. Hiscocks, chief engineer; and Captain de Havilland, chief designer.

The Royal visitors were given a rousing welcome by a guard of honour formed of the workpeople, and proceeded to make a tour of the shops. In each one the King and Queen took a great interest in the work going on, and many of the workpeople were asked to explain the process of which they were in charge. In the dope shop the King remarked upon the excellent ventilation and the absence of unpleasant smell.

Subsequently their Majesties motored to the aerodrome at

Mr. TWELLS BREX, in his notes in the *Daily Mail*, put it this way:

"Early during the investiture the guardian aeroplanes appeared. They flew at a tremendous height—so high that at times they seemed to hover. A gale must have been blowing in those Alpine heights, and the King's air hawks were often invisible behind scudding clouds."

General Brancker said that he agreed with the lecturer except in his statement that military and commercial aviation were quite different things and would lead to the development of various types of machines. He thought there was no reason why military and civil machines should not progress along similar lines. The big weight-carrying machines were just those which were required for bomb-dropping expeditions, the fast passenger aeroplanes were of the type most useful for reconnaissance purposes, while the very fast machines for exhibition flying and racing would be the type required for fighting in the air. At present they had to sacrifice a good deal to speed, but when the war was over and they could afford of greater strength, flying would be practically safe.

Lord Montagu said in India they already had landing places 15 miles apart along the N.W. Frontier and Khyber Pass, and the system had proved very successful. The war had accelerated the progress of aviation by 25 to 30 years.

Lord Cowdray said that before aviation was made a commercial success there were many difficulties to be overcome. Whatever efforts were made between now and the end of the war it was impossible to expect to be able to continue the aircraft industry at the present high pressure after the war. He agreed that the industry ought to be favourably treated in the matter of the taxation of excess profits. After the war there would be available thousands of aircraft, thousands of skilled pilots, and many thousands of mechanics for employment in commercial aviation.

Personally, he believed it would be found that Mr. Holt Thomas's estimate of the cost was somewhere near the mark—that it would not exceed 5s. per mile. It could not be expected that commercial flying would step into a business that would produce that amount. However rapid might be its growth it would be years before the trade itself would support the air service which Imperial needs demanded.

Commercial flying was bound to come; it would come quickly; it would come successfully, and not require Government assistance after, probably, the first five years, or maybe six or seven years. One could hardly picture the advantages flying would have for us in the future. It would bind nations together, and it would lengthen life in so far as it would enable us to do so much more in the future than we had been able to do in the past.

In connection with the figures regarding the carrying of mails given in Mr. Holt Thomas's paper, published in our last issue, a printer's error in the original paper as issued put a very different complexion on the state of affairs when only  $\frac{1}{4}$  load is carried (see Fig. G., p. 539). What Mr. Holt Thomas really said was that with full load four machines gave a profit of £60,000, three-quarter load a profit of £14,000, and half-load a loss of £35,000, and so on.

Hendon, where they were received by Major Lord Robert Innes-Ker, Commandant. Detachments of the R.N.A.S. and the R.F.C. were on the ground, and an exhibition of flying, including looping the loop, was given on one of the latest De Havilland machines by Captain B. C. Hucks, R.F.C. The King and Queen inspected a number of various types of machines, including one expressly designed for training purposes. In a subsequent flight, in comparison with four other planes in the air, this machine appeared to be almost standing still, and indeed the designer himself averred that when he brought it back from a distant air station some days ago he was passed by a goods train on the London and North-Western line.

Their Majesties also witnessed a display by an R.N.A.S. pilot, and visited the naval sheds.

A mock battle was also fought in the air between two fast aeroplanes, which manœuvred for position. As the King and Queen left, the Royal car again drove through lines of cheering workpeople, who had been permitted to leave the shops for the occasion.





### Casualties.

Second Lieutenant RICHARD G. R. ALLEN, West Yorkshire Regiment, attached R.F.C., reported missing on November 16th, 1916, is now reported as killed on that day while fighting an enemy machine in the air. He was the only son of the late Mr. Richard Allen, of Cavan, who became Clerk of the Crown and Peace for County Leitrim, and died last year, and of Mrs. Allen, now of Burgess Hill, Sussex.

Captain DONALD ALASTAIR LESLIE DAVIDSON, M.C., R.F.C. (reported killed in action on April 30th), was the elder son of the late Colonel Leslie Davidson, C.B., R.A., who died on active service in France in 1915, and of Lady Theodora Davidson, sister of the present Earl of Albemarle. Captain Davidson was born in 1891, and was educated at Wellington College, and was Page of Honour to King Edward VII, 1902 to 1907. He joined the R.F.C. as a flying officer in May, 1915, on his recovery from a very long illness. He went on active service in October, 1915, first to Egypt and then to Mesopotamia. There he was badly wounded in a fight, while dropping food over the beleaguered town of Kut. He was awarded the Military Cross for "conspicuous determination and gallantry" on that occasion, and was invalided home on account of the severity of his several wounds. He returned to active service in France in the spring of this year, was reported "missing" on April 30th, and is now notified killed while fighting, single-handed, a two-seater Hun machine. The King and Queen have expressed their "sympathy and sorrow for the dear boy who had already rendered such gallant service," and Queen Alexandra for "her dear Page of Honour."

Second Lieutenant HENRY COPE EVANS, D.S.O., R.F.C., reported missing on September 3rd, 1916, in an air fight, and now officially presumed to have lost his life, was the only son of the late W. H. Evans and of Mrs. Evans, of West Point, Camberley. Born in 1879, he was educated at Mr. Fendall's, Woodcote House, Windlesham, and Haileybury. Having gone out to Ontario to learn fruit farming, he enlisted in the Canadian Artillery, and served for a year in South Africa. On returning to Canada he took up ranching near Macleod, Alberta, and he also held a Government appointment as Range Rider. A keen sportsman and fine horseman, he was well known as a polo player, and was one of the early pioneers of the game in Western Canada. The day after war was declared he joined the Alberta Dragoons as a trooper, reaching England with the 1st Canadian Contingent in November, 1914. He saw much service in France from February to September, 1915, when he was given a commission and attached to the R.F.C. Joining his squadron at the front, he was at once engaged in the fighting from September 25th as an observer. In 1916 he trained in England for his pilot's certificate, returning to the front in June, where he did good service, bringing down several enemy machines. He was awarded the D.S.O. in August, and was also mentioned in despatches.

Lieutenant LEONARD A. FULLER, R.F.C., killed on May 17th, aged 25, was the youngest son of Mr. and Mrs. Edward Fuller, Croydon. He was educated at the Whitgift Grammar School and the Imperial College of Science and Royal School of Mines. When war was declared he joined the London University O.T.C., and received a commission in the Durham Light Infantry, transferring later to the R.F.C.

Sergeant-Pilot (a rank equivalent to that of British Flight Lieutenant) RONALD WOOD HOSKIER, an American pilot, killed in France on April 23rd in an action against three enemy aeroplanes, abandoned his studies at Harvard University, U.S.A., to join the other American flyers already at the front. After eight months in the schools, he joined the Lafayette squadron last December, and rendered valuable services during his five months at the front. His "citation" reads:—"Véritable âme d'élite pour sa bravoure et son esprit de sacrifice, est tombé le 23 avril après une héroïque défense dans un combat contre trois appareils ennemis." Hoskier was the

second American airman to fall after the entry of the United States into the war.

Captain HORACE CLIFFORD LOMER, R.N.D., attached R.F.C., who has been killed in action, was the only son of Mr. Horace Arthur Lomer, of "Invermark," Elmbourne Road, London, S.W., and a grandson of the late Alderman Walter A. Lomer, J.P., of Woolston, and was 27 years of age. He was educated at Dulwich College, joined the R.N.D. in November, 1914, obtaining his commission in January, 1915, and his Captaincy in January, 1916. He transferred to the R.F.C. in August, 1916, receiving his wings in December last, and left for France in January, 1917.

Major ERIC OGILVIE MCMURTRY, Canadian Infantry, who was killed while on patrol work for the R.F.C. on April 28th, was the youngest son of Mr. and Mrs. S. A. McMurtry, of Montreal. He was born in Canada in 1894, and graduated from the Royal Military College, Kingston, in June, 1914. At the outbreak of war he took a commission in the Canadian infantry, and in 1915 he came overseas with a battalion, and served with them at the front with the rank of major. Early in January, 1917, he was transferred to the R.F.C., and went to the front again on April 18th, but 10 days later his machine was brought down. Major McMurtry leaves a widow, daughter of Mr. and Mrs. F. N. Southam, of Montreal, and two brothers of his are at the front, both with the artillery.

Second Lieutenant F. O'SULLIVAN, N. Staffs Regt., attached R.F.C., who lost his life, at the age of 20, in an aerial fight on April 23rd, was the youngest son of Mr. and Mrs. James O'Sullivan, of High Bank, Burton-on-Trent. He enlisted in the Motor Machine Gun Service early in 1915, and got his commission in November of that year. As an observer he obtained his "wing" in less than two months. His eldest brother fell in 1915.

Second Lieutenant HUGH CECIL PATTERSON was killed on April 30th in a collision in the air when returning from patrol. He was the only son of the late Thomas Main Patterson, of Littlebourne House, near Canterbury, and was educated at Warden House, Deal, and at Marlborough. He joined the U.P.S. Brigade in October, 1914, and he went out to France in November, 1915, but returned in March of the following year. He was in the Cadet Corps till July, when he obtained a commission in the Bedfordshire Regiment, and was attached to the R.F.C. in November. He remained in England for training till April 18th, and was killed 12 days afterwards.

Second Lieutenant H. TENNANT, Dragoon Guards, att'd. R.F.C., who was on May 30th reported killed in France, was the eldest son of the Rt. Hon. H. J. Tennant, M.P., late Under-Secretary for War, and Mrs. Tennant, the director of Women's National Service. At the age of 19 the young officer had already made a reputation as a skilful pilot and instructor. He left for France a few weeks ago. It is just a year since Lieutenant Tennant met with a serious flying accident in Kent, his companion, Captain Grime-Jones, being killed. It was Mr. Tennant who, earlier in the year, replying to criticisms of the flying service in the House of Commons, said that some of them who had great responsibilities and who realised the dangers inherent to warfare in the air and to the conditions in the Flying Corps had sent their own sons into the Flying Corps.

Lieutenant CYRIL ALFRED TRUSCOTT, R.N.V.R., who died on April 23rd of wounds received that day, aged 33, was the youngest son of the late James Freeman Truscott and of Mrs. R. Rugeley Bury, of 60, Avenue Road, N.W. He was educated at Clifton College, Tours, and Hanover, and was a director of the firm of publishers and printers bearing his name. He joined the Royal Marines in September, 1914, and went to Belgium. On the day of its capture by the Germans he drove the last motor-car into Ostend containing pilots, who were instrumental in saving many ships in the harbour there. In February, 1915, he joined the R.N.V.R., and after training was in Gallipoli until the



evacuation, a period of seven months. He has been on continuous active service on another front since. He was with a first wave that went over the top, and was badly wounded, but he sat on the ground cheering his company on. He was a member of the Junior Carlton Club, and a Liveryman of the Haberdashers' and Stationers' Companies.

## Missing and Prisoner of War.

Lieutenant DARELL K. PARIS, M.C., R.A., attached R.F.C., reported missing April 28th, is now reported a prisoner at Karlsruhe.

## Married and to be Married.

Flight-Lieutenant FRANCIS JOHN LINNELL, R.N., only son of Mr. and Mrs. Linnell, of Grafton Lodge, Margate, on May 26th, was at Christ Church, Turnham Green, W., married to MARGARET CHRISTABEL, only daughter of Mr. and Mrs. R. A. CARPENTER, of Cleveland, Barrowgate Road, Chiswick, W.

The marriage arranged between Captain R. N. F. MILLS (attached R.F.C.), younger son of Mr. and Mrs. Mills, of Tapton Grove, Derbyshire, and MARJORY FRANCES, younger daughter of Sir FRANCIS BLAKE, Bt., M.P., and the late Lady Blake, of Tillmouth Park, Cornhill-on-Tweed, and 10, Old Court Mansions, Kensington, W. 8, took place on June 6th at St. Mary Abbots, Kensington.

An engagement is announced between Lieutenant S. G. ROME, M.C., Argyll and Sutherland Highlanders and R.F.C., younger son of Colonel and Mrs. Geo. Rome, Knockbay House, Campbeltown, Argyll, and DOROTHY JALLAND, only

daughter of Major HAROLD J. STILES, R.A.M.C., and Mrs. Stiles, 9, Great Stuart Street, Edinburgh, and Whatton Lodge, Gullane.

The marriage arranged between Miss DOROTHY LYTTON WILSON and Flight Sub-Lieutenant HOWARD VIVIAN TERRY, R.N., will take place at Goldhanger, Essex, on June 9th.

## Items.

Sir FRANCIS H. BARKER, whose name appeared in the list of Honours on Monday, is a son of the late Alfred Barker, of Constantinople, and Elmfield, Esher. He was very actively interested in the development of the Parsons turbine, both for land and marine, in Europe. Sir Francis is a director of Vickers, Ltd., and chairman of the Russo-British Chamber of Commerce. He married Aimée de Vere Vere, eldest daughter of the late Arthur de Vere Vere.

The death, at 2, Montagu Square, of Mrs. SAMSON, wife of Mr. Charles L. Samson and mother of Commander C. R. SAMSON, D.S.O., Royal Navy, took place last week. Mrs. Samson had for many years devoted herself to philanthropic work, and in particular her services in connection with the "Maine" Memorial Home will be long and gratefully remembered.

The following wills have been proved:—

Lieutenant G. L. COLOMB, London R., attached R.F.C., died in France November 22nd, £3,458.

Second Lieutenant G. B. SAMUELS, Durham L.I. and R.F.C., London, killed in France October 22nd, £800.

## FATAL ACCIDENTS.

2ND LIEUT. CHARLESWORTH, R.F.C., was flying early on the morning of May 30th in the vicinity of an aerodrome in an Eastern county when his aeroplane burst into flames and dived to the ground. When liberated from the machine it was found that he was badly burnt. He died shortly afterwards.

A verdict of "Accidental death" was returned at an inquest held at Hurst, Berks., on June 2nd on Lieut. N. C. Clark, R.F.C., and 1st Air-Mech. W. Fozard, who were killed in an aeroplane accident on the previous day. A witness said the officer lost his way, and, descending, enquired his whereabouts. Being informed, he again ascended. The machine made a complete circle, and when it had half completed another it dropped slightly and came nose down to the ground. The machine was smashed, and the mechanic found dead under it. The officer was unconscious, and died almost immediately.

Particulars were given at an inquest on June 2nd of an explosion which occurred at an aerodrome at Hoo, Kent, Lieut. P. T. Armstrong, R.N.V.R., and Leading Mech. C. W. Harris being killed, while two other men were severely injured. When a fire broke out in the gas-holder it was found possible to discharge a considerable quantity of gas, and the leak was allowed to burn itself out. Wing-Commander Cave-Browne-Cave and Lieut. Armstrong subsequently made an examination, and satisfied themselves that at the time there was no flame on the surface of the holder, and Lieut. Armstrong continued to take precautionary measures, but about 20 minutes later the holder blew up.

Capt. A. P. Davidson said the explosion must have been caused by a spark coming into contact with a mixture of hydrogen gas and air.

A verdict of "Accidental death" was returned in each case.

2nd Lieut. W. E. Catt met with a fatal accident while flying near his home on June 4th. He was at a considerable height, when he apparently experienced engine trouble, and soon afterwards the machine nose-dived and collapsed on an apple tree in Pennington Lane. The aviator succumbed to his injuries while being conveyed to hospital.

## The Southwick Accident.

At the inquest on the victims of the accident at Southwick, when an aeroplane fell on a crowd attending a food economy meeting, it was made clear that no flying demonstration had been arranged for in connection with the gathering. It appears that 2nd Lieut. P. Thompson, R.F.C., while flying in the neighbourhood, saw a crowd and planned down to see what was happening. He had a bright sun shining in his eyes, and came down lower than he intended; in trying to rise his machine touched a flagstaff which he had not seen before. A verdict of "Accidental death" was returned, and the jury expressed their sympathy with the relatives of the deceased and with the flying officer.

## Captain Ball's Fate.

THE hopes that Capt. A. Ball, D.S.O., M.C., who was reported missing in the official lists on May 18th, was alive

A verdict of "Accidental death" was returned at an adjourned inquest at Marylebone on June 4th on Capt. S. E. Lukyn, M.C., R.W. Surrey Regt., who died in the R.F.C. hospital as the result of injuries received in an aeroplane accident in April. Capt. Harrison, who was acting as pilot-instructor, was now well enough to give evidence. He said he had had six months' experience in France, in addition to a long period in England. The machine had only been in use for 10 days.

He had been up in this machine on several occasions, and considered it one of the finest of the kind he had used. When up about 1,000 feet the machine began to form spirals. He tried to check them, but could not get the control over. The aeroplane nose-dived, and he remembered nothing more. He could only account for the accident by the control getting out of order.

A verdict of "Accidental drowning" was returned at an inquest held at an East Coast town on June 4th upon D. A. Duncan, R.N.A.S. While he was flying on June 2nd a loud explosion occurred, and his machine fell spinning into the water. The airman, being strapped in his seat, was drowned. An examination of the engine showed that the cylinder had cracked.

## Flying Officer Drowned.

LIEUT. R. S. CARLTON, attd. R.F.C., was drowned on the evening of May 30th while boating on the river at Weybridge. He was accompanied by Lieut. Hunter, R.F.C., who was recovered in time for respiration to be restored, although he had to be removed to the Weybridge Cottage Hospital. The latter owes his life to the pluck of two ladies who were boating in the vicinity. One lady jumped into the river, while the other remained in the boat, and between them they prevented Lieut. Hunter from sinking. Two gentlemen came along in another boat and completed the rescue. It is presumed that Lieut. Carlton got caught in weeds, and was thus handicapped in endeavouring to save himself.

have been dispelled by the official information that he had been killed and was buried on May 17th at Annoeullin, near Lille. On Monday it was announced that the French Government had conferred the Legion of Honour on Capt. Ball.

## Captain Robinson Transferred.

It is stated that information has been received that Capt. Leefe Robinson, V.C., who had been reported as a prisoner at Karlsruhe, has been transferred to the "reprisal" camp at Freiburg.

## That added "0" again!

IN the inscription to the series of Dutch views in our last issue, it was, by a printer's error, made to appear that the picture of Marken Island was taken from a height of 36,300 feet. It should, of course, have been 3,630 feet.





# The British Air Service



"PER ARDUA AD ASTRA"

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

## Royal Naval Air Service.

Admiralty, May 29th.

**Temporary Probationary Flight Officer.**—R. V. Britnoll, transfd. to Prob. Observer Officer (Temp.).

**Temporary Sub-Lieutenant, R.N.V.R.**—A. E. H. Roberts, transfd. to R.N.A.S. as Prob. Flight Sub-Lieut. (Temp.), seniority Mar. 20th, 1916.

**P.O.**—F. L. Wills, entered as Prob. Observer Officer (Temp.), seniority May 31st.

Temp. commissions (R.N.V.R.) have been granted to the following, seniority May 28th:—Lieuts.—Dr. J. C. Mottram and O. H. Mason; Sub-Lieut.—R. Robertson-Shersby-Harvie.

Admiralty, May 31st.

**Probationary Flight Commander.**—R. B. Ward, confirmed in rank of Flight Comdr., seniority Mar. 30th.

The following Prob. Flight Officers have been promoted to Flight Sub-Lieuts. (Temp.), seniority as stated:—R. L. Kent and A. M. O. McLachlan, Feb. 16th; R. G. Saunders and L. G. Wright, Mar. 2nd; J. T. C. Gray, E. S. Ades, and M. J. R. Duff-Fyfe, Mar. 5th; T. W. G. Thomson, Mar. 11th; T. H. Boyd, March 19th; E. S. Dean, March 22nd; G. H. Willows and H. F. Airey, Mar. 25th; A. M. Tidey, G. P. C. Green, A. C. Jones, and C. R. Pegler, all Apr. 2nd; R. Jarman and F. L. B. Wood, Apr. 11th; J. N. McAllister, Apr. 18; H. R. Dyke and C. M. R. Prewett, May 2nd.

**Assistant Paymaster, R.N.**—R. M. Bailey, graded as Prob. Flight-Lieut., seniority May 26th.

**Leading A.M.**—H. F. Jackson, granted a temp. commission as Sub-Lieut. (R.N.V.R.), seniority May 27th, and apptd. to President, addl., for meteorological duties.

The following temp. entries (R.N.V.R.) have been made:—Lieuts.—R. H. Meers, seniority Apr. 23rd, and appointed to President, addl., for R.N.A.S.; F. A. Applebee (apptd. to President, addl. for R.N.A.S.), E. J. Wickens and H. W. J. Chipchase, all seniority May 30th. Sub-Lieuts.—R. A. Brown and J. L. Potts, seniority May 30th.

Mr. E. A. Davies entered as Warrant Officer, 2nd grade, seniority Apr. 23rd, and apptd. to President, addl., for R.N.A.S.

Admiralty, June 1st.

**Temporary Flight Sub-Lieutenant.**—G. M. Morse, granted a temp. commission as Lieut. (R.N.V.R.), seniority May 31st.

**Temporary Probationary Flight Officer.**—J. McClinton, granted a temp. commission as Sub-Lieut. (R.N.V.R.), seniority May 31st.

**Temporary Assistant Paymaster, R.N.R.**—W. L. Davidson, entered as Prob. Flight Officer (Temp.), seniority May 31st.

Admiralty, June 2nd.

**Temporary Sub-Lieutenants, R.N.V.R.**—F. L. Morrison, to "Renown," and S. S. Tyler, to "Repulse"; both June 1st.

The following have been entered as Probationary Flight Officers, seniority as stated, and all apptd. to President addl. for R.N.A.S.:—F. G. Newell; May 10th. W. D. Baird, R. C. B. Brading, G. A. F. Hudson, H. C. Margeet, A. C. G. Menzies, J. V. Ould, C. Roberts, E. W. Roberts, G. S. Shaw, G. S. Smith, E. G. Spooner, N. A. Taylorson, E. H. Wells, S. E. Wise, C. E. Wodehouse and F. Wood; all May 22nd.

## Royal Flying Corps (Military Wing).

London Gazette, May 29th.

**Flight Commander.**—Capt. L. L. MacLean, Ind. Army, from a Flying Officer, Apr. 18th.

**Flying Officers.**—Lieut. J. C. A. Caunter, Welsh R., and to be secd.; Mar. 21st. Temp. 2nd Lieut. W. H. Howes, R. Lanc. R., and to be transfd. to the Gen. List; Mar. 29th. 2nd Lieut. E. B. Denison, Spec. Res.; Apr. 5th. Temp. Capt. G. R. Pollard, attd. L'pool R., and to be transfd. to the Gen. List; Lieut. W. R. Winterbottom, Yeo. (T.F.), and to be secd.; Lieut. J. H. V. Cameron, Canadian Inf.; Lieut. S. A. Harper, M.C., Ches. R., and to be secd.; Temp. and Lieut. (on prob.) R. A. Birkbeck, Gen. List; May 7th. Lieut. H. A. Kennedy, Canadian Gen. List; 2nd Lieut. J. B. Crompton, Spec. Res.; temp. 2nd Lieut. R. Peel, attd. Oxf. and Bucks L.I., and to be transfd. to the Gen. List; Temp. 2nd Lieut. (on prob.) H. Good, Gen. List, from a Flying Officer (Ob.), with seniority from May 26th, 1916; May 8th.

**Balloon Company Commander.**—Graded as a Flight Comdr.—2nd Lieut. (Temp. Lieut.) H. F. Wright, Spec. Res., from a Balloon Comdr. (graded as a Balloon Officer, and to be temp. Capt. whilst so empld.); May 3rd.

**Balloon Commander.**—Graded as a Balloon Officer.—Temp. 2nd Lieut. H. F. Darby, Gen. List, from a Balloon Officer (May 3rd).

**Balloon Officers.**—Temp. 2nd Lieut. (on prob.) W. L. Culverwell, Gen. List; Feb. 28th. Temp. 2nd Lieut. C. F. Frank, Gen. List; Mar. 27th. Temp. 2nd Lieut. (on prob.) H. W. Bower, Gen. List; Temp. 2nd Lieut. (on prob.) A. G. Bullock, Gen. List; Temp. 2nd Lieut. (on prob.) R. H. Loosemore, Gen. List; Apr. 25th. Temp. 2nd Lieut. (on prob.) G. H. Brown, Gen. List; Apr. 30th; Temp. 2nd Lieut. (on prob.) G. J. E. Agnew, Gen. List (May 1st).

**Equipment Officers, 2nd Class.**—Lieut. B. Mott, S.R., from 3rd Cl.; May 13th. 3rd Class.—2nd Lieut. J. H. Ledebor, S.R.; Dec. 27th, 1916. 2nd Lieut. W. T. Langton, S.R.; Mar. 28th. 2nd Lieut. H. F. Farr, S.R.; Apr. 9th. 2nd Lieut. F. D. Williams, S.R.; April 13th. 2nd Lieut. W. W. McDonald, S.R.; 2nd Lieut. J. G. F. Horridge, S.R.; Apr. 16th. 2nd Lieut. E. E. N. Smith, S.R.; Apr. 28th. Lieut. B. O. Watts, S.R., reverts from the 2nd Cl. at his own request; May 17th, seniority Oct. 26th, 1915.

**Supplementary to Regular Corps.**—2nd Lieut. (on prob.) E. C. L. Killen relinquishes his commn. on account of ill-health, and is granted hon. rank of 2nd Lieut.; April 24th. 2nd Lieut. (on prob.) T. D. Bracken relinquishes his commn. on account of physical unfitness as a Pilot or Observer; May 29th. 2nd Lieuts. (on prob.) are confirmed in their rank: H. F. Farr, J. G. F. F. Horridge, W. T. Langton, W. W. McDonald, R. H. New, E. E. N. Smith, R. G. Turner, F. D. Williams, G. C. Atkins, G. J. Blackmore, J. B. Crompton, E. B. Denison, H. E. Fletcher, J. H. Ledebor, A. MacNamara.

**Flying Officers.**—Temp. 2nd Lieut. (on prob.) J. F. Hillier, attd. Lan. Fus., and to be transfd. to Gen. List; May 3rd. 2nd Lieut. (Temp. Lieut.) R. W. Cash, Notts. and Derby R. (T.F.), and to be secd.; Temp. 2nd Lieut. (on prob.) P. F. Kent, Gen. List; May 4th. 2nd Lieut. A. G. Whitehead, W. York. R. (T.F.), and to be secd.; May 6th. Lieut. J. G. Young, Leins. R., S.R., and to be secd.; 2nd Lieut. (Temp. Lieut.) P. S. Mumford, Yeo. (T.F.), and to be secd.; 2nd Lieut. W. U. Dykes, Sco. Rif., S.R., and to be secd.; 2nd Lieut. A. R. Strang, R.F.A. (T.F.), and to be secd.; 2nd Lieut. (on prob.) E. H. Garland, S.R.; 2nd Lieut. (on prob.) B. B. Perry, S.R.; 2nd Lieut. (on prob.) P. J. Moloney, S.R.; Temp. 2nd Lieut. (on prob.) P. J. Rodocanachi, Gen. List;

May 7th. Temp. 2nd Lieut. (Temp. Lieut.) C. L. Blake, Gen. List, from a Flying Officer (Ob.), with seniority from April 21st, 1916; Temp. 2nd Lieut. H. J. W. McConnell, Gen. List; 2nd Lieut. (on prob.) N. S. Cameron S.R.; 2nd Lieut. (on prob.) F. S. Coghill, S.R.; May 8th.

**Flying Officers (Observers).**—Lieut. M. L. Howard, Canadian Engrs.; May 9th, seniority Jan. 9th. Temp. 2nd Lieut. A. Boyle, R.A., and to be transfd. to Gen. List; May 8th, seniority Jan. 11th. Temp. 2nd Lieut. R. T. Jones, E. Kent R., seniority Jan. 15th, and to be transfd. to Gen. List; Temp. Lieut. E. J. McCormick, R. Innis. Fus., seniority Feb. 7th, and to be transfd. to the Gen. List; Lieut. D. M. Firench, Suff. R. (T.F.), from attd. Camp. R. (T.F.), seniority Feb. 15th, and to be secd.; May 9th. 2nd Lieut. (Temp. Lieut.) A. R. Sortwell, A.S.C., and to be secd.; May 8th, seniority Feb. 15th. Temp. 2nd Lieut. (on prob.) H. D. Duncan, attd. K.R. Rif. C., seniority Feb. 15th, and to be transfd. to the Gen. List; Lieut. P. D. McIntosh, Canadian Inf., with seniority from April 20th; Lieut. H. G. Kent, Canadian Inf., with seniority from April 28th; 2nd Lieut. T. R. Mayhew, Leic. R., S.R., seniority Sept. 27th, 1916, and to be secd.; Temp. 2nd Lieut. H. H. Down, Gen. List, seniority Jan. 4th, 1917; Lieut. C. E. B. Corbould, Canadian Inf., seniority Jan. 31st; May 11th. 2nd Lieut. D. Mackenzie, Lond. R. (T.F.), seniority Feb. 17th; 2nd Lieut. K. A. Seth-Smith, North'd Fus., seniority Mar. 6th, 1917, and to be secd.; Lieut. H. K. Thompson, Canadian Inf.; May 11th, seniority Mar. 20th. Lieut. J. A. Sully, Canadian Inf.; Lieut. D. J. Allan, Canadian Inf.; May 12th, seniority Mar. 25th. Lieut. D. G. Davidson, Canadian Inf.; May 8th, seniority April 20th.

**Special Appointment.**—Graded as a Park Comdr.—Temp. 2nd Lieut. J. Rubie, D. Gds., from Adj., and to be Temp. Maj. whilst so empld.; May 18th.

**Equipment Officers, 2nd Class.**—Temp. Lieut. G. J. Monson-Fitzjohn, Bord. R. (T.F.), from the 3rd Cl.; Lieut. A. J. Elliott, T.F. Res.; April 1st. 3rd Cl.: 2nd Lieut. G. J. Blackmore, S.R.; April 24th. The appointment of Qr.-Mr. and Hon. Lieut. W. Batchelor, T.F. Res., notified in the Gazette of May 11th is antedated to April 14th.

**Memoranda.**—Following from R.F.C. to be 2nd Lieuts. for duty with R.F.C.: Actg. Sergt.-Major L. E. Carter and Flight-Sergt. E. Hiscock; May 30th.

To be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.:—G. B. Nicol; May 11th. T. L. Edwards; May 13th.

**Supplementary to Regular Corps.**—Capt. C. G. Bell resigns his commission on account of ill-health, and is granted hon. rank of Capt.; May 30th.

**General List, R.F.C.**—Cadets to be Temp. 2nd Lieuts. (on prob.):—May 10th: C. E. Abell, H. L. Adams, E. D. Aldridge, G. C. Alger, H. D. Arkell, G. B. Ash, W. Atkinson, F. A. Ayrton, G. B. Bailey, A. J. Ballantyne, J. N. Bardsley, E. A. Bell, R. D. Bennett, R. G. Berwick, L. W. Boulter, G. R. Bradley, Z. Braun, C. R. Brice-Halley, I. D. Campbell, R. H. V. Chester, G. Clapham, J. W. Clark, S. R. Clark, E. A. Clegg, A. K. Cowper, C. W. Crewe, R. Critchley, A. L. Cuffe, J. B. Cuthbert, J. Day, Viscount Esme' de Fleury, W. E. Doran, H. H. Ezard, D. C. Faulds, T. B. Fenwick, R. D. Forrester, R. G. Frith, J. R. Fuller, G. H. Gallinger, F. P. Galloway, F. George, V. G. Goodchild, C. G. Gowing, E. P. Griffith, W. Haigh, F. W. Hainsby, A. S. Hamilton, J. D. I. Hardman, A. W. Harrison, R. K. Harrison, C. Hawley, H. C. Haydock, S. S. Henry, I. F. Hind, J. H. Hines, F. Hobson, J. C. Hopkins, J. G. Horne, T. F. Hosking, R. S. Hitchcock, A. R. Hungerford, (Prince) C. G. Imeretinsky, L. M. Isitt, T. G. Jackson, S. Jones, C. F. King, J. G. Kingsbury, A. G. Kingsford, T. R. Kirkness, E. O. Krohn, H. W. Laird, E. W. Larby, I. H. Lawrence, S. E. Lawrence, R. Lee-Mitchell, W. P. Lester-Jones, G. V. Loch Lewis, A. D. Longley, P. L. Lowenhoff, J. C. Lowenstein, T. D. Macintosh, H. D. Macpherson, F. Maden, H. I. Mahaffy, W. F. G. March, H. C. Maybury, R. McIntosh, A. M. McJanet, S. G. McNaught-Davis, A. W. Metge, C. W. Middleton, D. W. M. Miller, C. K. Mills, K. C. Mills, E. J. Mott, P. G. Mulholland, H. Nelson, H. Newman, B. G. Nicholson, R. H. Nixon, T. Noad, L. G. Norton, P. C. Norton, N. Openshaw, C. H. S. Pain, H. B. Parkinson, M. A. Peacock, A. H. Pelle, R. A. Phillips, S. F. Pickup, C. H. Piper, R. P. Pohlmann, C. E. Preece, F. G. Quigley, F. C. Ralph, F. C. Ransley, H. S. H. Read, S. B. Reece, T. T. Reeves, F. W. Rhude, E. S. Robins, H. N. C. Robinson, B. H. Sagar, W. Smallwood, E. J. Smetham-Jones, W. R. S. Smith, W. L. S. Spinks, S. Stanger, J. I. Stockwell, C. B. Stratton, C. H. Strong, H. M. Struben, W. I. Thomson, F. C. A. Thorpe, L. J. Troughton, A. R. Turpin, A. E. Turvey, R. J. Underhill, R. C. Wade, A. G. N. Wall, L. W. Walsh, J. S. Walthew, W. N. H. Warden, L. C. Wates, J. D. Watson, J. K. Watson, S. W. Watson, F. W. Wells, S. C. B. West, M. W. White, R. S. White, R. M. Whitehead, A. B. Whiteside, S. L. Wilcox, C. J. Willett, B. C. Webb-Windle, S. H. Winkley, H. A. Winter, T. E. Wray, A. J. Wright and H. A. Yeo.

London Gazette Supplement, May 30th.

**Flying Officers.**—Temp. 2nd Lieut. E. Jones, Gen. List; April 2nd. 2nd Lieut. C. Joiner, E. Surr. R., and to be secd.; April 11th. 2nd Lieut. J. M. Stubbs, Hrs., from a Flying Officer (Ob.); May 2nd, seniority July 3rd. Lieut. J. H. Caldwell, Cam'n. Highrs., S.R., and to be secd.; May 4th. 2nd Lieut. (on prob.) P. E. Scrivener, S.R.; Temp. 2nd Lieut. (on prob.) F. Moore, Gen. List; May 5th. 2nd Lieut. (Temp. Capt.) A. K. H. Neale, L'pool. R. (T.F.), and to be secd.; Lieut. P. E. Welchman, K.O.Soc. Bord., from a Flying Officer (Ob.), seniority Sept. 6th; Temp. 2nd Lieut. (on prob.) E. C. Clark, Gen. List; Temp. 2nd Lieut. (on prob.) E. Olivier, Gen. List; 2nd Lieut. (on prob.) H. G. Tinney, S.R.; May 8th. 2nd Lieut. (Temp. Lieut.) S. Lambert, E. York. R. (T.F.), and to be secd.; Temp. Lieut. R. Munro, Training Res. Bn., and to be transfd. to the Gen. List; Temp. 2nd Lieut. F. Green, Gen. List; May 9th.

**Flying Officers (Observers).**—2nd Lieut. (Temp. Lieut.) H. L. C. Aked, W. York. R. (T.F.), and to be secd.; April 30th, 1916, seniority Mar. 22nd, 1916. 2nd Lieut. G. H. Plowman, R. Innis. Fus., S.R., and to be secd.; Jan. 1st, seniority Sept. 30th. 2nd Lieut. (from Temp. Lieut., R.E.) A. W. Vigers, M.C., R.E. (T.F.); May 12th, seniority Feb. 1st. 2nd Lieut. L. B. Goodyear, R.W. Surr. R. (T.F.); May 12th, seniority Mar. 8th, and to be secd. Temp. 2nd Lieut. R. M. Dixon, attd. R. Berks. R., and to be transfd. to Gen. List; May 10th, seniority Mar. 8th. Lieut. J. C. McKeever, Can. Inf.; May 12th, seniority Mar. 17th. Temp. 2nd Lieut. C. S. MacGregor, Gen. List; May 10th, seniority Mar. 20th. Lieut. H. C. McKinney, Can. Inf.; May 12th, seniority April 28th. Lieut. B. A. S. Lewin, D. of Corn. L.I.; seniority July 7th, and to be secd. Temp. and Lieut. W. F. Leech, Gen. List, seniority Oct. 27th. Lieut. F. J. Whigham, Can. Inf.; seniority Nov. 9th. 2nd Lieut. W. L. Coutts, Arg. and Suth'd. Highrs. (T.F.); seniority Nov. 16th, and to be secd. 2nd Lieut. R. M. D. Fairweather, High. L.I., S.R., seniority Jan. 2nd, and to be secd.; Lieut. H. S. Quigley, M.C., Can. Divl. Sig. Cos., seniority Jan. 18th; 2nd Lieut. E. T. Philip, R.F.A., S.R., seniority Feb. 4th; Temp. 2nd Lieut. (on prob.) K. P. Ewart, Gen. List, seniority Oct. 26th; 2nd Lieut. R. D. Reid,



R.G.A. (T.F.), seniority Nov. 25th, and to be sec'd.; 2nd Lieut. H. H. Kilby, Lrs., S.R., seniority Dec. 5th; 2nd Lieut. (Temp. Lieut.) W. S. Lawson, Arg. and Suth'd. Highrs. (T.F.), seniority Jan. 30th, and to be sec'd.; Temp. Lieut. A. E. Smith, Dorset R., seniority May 9th; May 1st. 2nd Lieut. (on prob.) E. G. Richardson, R.G.A., S.R., and 2nd Lieut. H. B. Harvey, R.A., and to be sec'd.; seniority Feb. 15th; May 1st. Temp. 2nd Lieut. M. H. Armstrong, attd. Middx. R., and to be transfd. to Gen. List; 2nd Lieut. G. K. Walker, W. Rid. R. (T.F.), and to be sec'd.; 2nd Lieut. V. V. Cadman, Middx. R. (T.F.), and to be sec'd., seniority Nov. 25th; May 1st. Lieut. W. W. Boyd, Can. Art.; May 13th, seniority Dec. 8th. Temp. 2nd Lieut. B. C. Selfe, R.W. Surr. R.; May 14th, seniority Jan. 24th. 2nd Lieut. G. J. Farmer, Lond. R. (T.F.), and to be sec'd. May 13th, seniority Jan. 30th. Temp. 2nd Lieut. R. J. Housden, attd. R. Fus., and to be transfd. to Gen. List; 2nd Lieut. H. B. D. Harrington, Lond. R. (T.F.), and to be sec'd.; 2nd Lieut. J. Murch, Lond. R. (T.F.), and to be sec'd.; May 13th, seniority Mar. 22nd. Lieut. T. L. Tibbs, Can. Inf.; May 13th, seniority Mar. 25th. The appointment of Lieut. M. K. Parlee, Can. Inf., notified in the *Gazette* of April 25th, is antedated to Feb. 1st.

**Equipment Officers, 3rd Class.**—Temp. 2nd Lieut. C. W. Hogg, Gen. List; Mar. 20th. Temp. 2nd Lieut. L. O. Millington, Gen. List; Temp. 2nd Lieut. D. R. Morford, Gen. List; 2nd Lieut. (on prob.) A. E. Rampton, S.R.; 2nd Lieut. (on prob.) E. P. Spriggs, S.R.; 2nd Lieut. (on prob.) C. E. Wykes, S.R.; 2nd Lieut. (on prob.) D. G. Moreton, S.R.; 2nd Lieut. (on prob.) R. J. Shanks, S.R.; May 9th.

**Memoranda.**—Following from R.F.C., to be Temp. 2nd Lieuts. (on prob.) for duty with Mil. Wing of that Corps;—2nd Cl. Air-Mech. L. F. Bishop; May 2nd. Flight-Sergt. E. M. S. Levin; May 3rd.

To be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.—C.P.O. J. L. V. Bullimore, from R.N.A.S.; May 4th. J. Creighton-Jones, late Lieut. S. African Forces; May 14th.

**Supplementary to Regular Corps.**—2nd Lieut. (on prob.) C. A. D. Fisher relinquishes his commission on account of ill-health, and is granted hon. rank of 2nd Lieut.; May 31st. 2nd Lieuts. (on prob.) are confirmed in their rank: R. A. Ayrton, D. Alexander, J. W. G. Boyd, O. F. Cooke-Yarborough, A. Dobson, R. J. Fetherston, J. W. Fleming, W. H. Griffith, R. B. Hutchings, D'A. F. Hilton, A. N. Meier, R. M. Smith and J. E. H. Swain.

## London Gazette Supplement, May 31st.

**Flight-Commander.**—Temp. Lieut. N. B. Fuller, Gen. List, from a Flying Officer, and to be Temp. Capt. whilst so employed; May 23rd.

**Flying Officers.**—Temp. 2nd Lieut. (on prob.) R. A. Stedman, Gen. List; April 11th. 2nd Lieut. R. B. Steele, Ind. Army Res. of Officers; April 27th. 2nd Lieut. C. C. Banks, R. W. Fus. (T.F.) and to be sec'd.; May 2nd. 2nd Lieut. (Temp. Lieut.) J. P. Castle, R.E. (T.F.), and to be sec'd.; 2nd Lieut. T. J. C. Martyn, Lond. R. (T.F.); May 4th. Lieut. T. V. Hunter, Rif. Brg., and to be sec'd.; Lieut. A. B. Thorne, R.F.A., S.R., from a Flying Officer (Ob.), seniority May 2nd, 1916; Temp. 2nd Lieut. M. H. Colley, R.E.; and Lieut. W. J. H. Courtis, Devon. R., and to be sec'd.; Temp. 2nd Lieut. (on prob.) M. O. Baumann, Gen. List; May 9th. 2nd Lieut. (Temp. Capt.) C. B. Glynn, L'pool. R. (T.F.), and to be sec'd.; Temp. Lieut. G. H. Walker, Gen. List, from a Flying Officer (Ob.), seniority June 17th; May 10th. 2nd Lieut. G. H. Pollard, Arg. and Suth'd. Highrs. (T.F.), and to be sec'd. Temp. 2nd Lieut. D. P. Cox, Gen. List, from a Flying Officer (Ob.). May 16th. Temp. 2nd Lieut. W. E. Cass, Gen. List, from a Flying Officer (Ob.), seniority Aug. 3rd. Temp. 2nd Lieut. (on prob.) G. D. Daly, Gen. List; Temp. Lieut. F. E. J. F. Smedley, Leic. R., and to be transfd. to Gen. List; 2nd Lieut. E. H. Stevens, E. Lan. R., S.R., from a Flying Officer (Ob.), seniority April 15th, 1916; 2nd Lieut. N. F. Perris, Lond. R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. (on prob.) R. W. Anderson, Gen. List; Temp. 2nd Lieut. S. Black, attd. L'pool. R., and to be transfd. to Gen. List; 2nd Lieut. R. M. Smith, S.R.; May 17th. 2nd Lieut. A. O. Balaam, Suff. R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. H. M. D. Walker, Gen. List; 2nd Lieut. D'A. F. Hilton, S.R.; Lieut. E. H. Paquin, Can. Inf., from a Flying Officer (Ob.), seniority Mar. 2nd, 1916; Temp. 2nd Lieut. (Temp. Lieut.) R. J. E. P. Goode, Gen. List, from a Flying Officer (Ob.), seniority Aug. 26th; Temp. 2nd Lieut. (on prob.) E. L. Humphreys, Gen. List; Temp. 2nd Lieut. (on prob.) R. D. K. Taylor, Gen. List; May 12th. Temp. 2nd Lieut. S. I. Gribble, M.C., Rif. Brig., and to be transfd. to Gen. List; May 13th. Temp. 2nd Lieut. A. N. Pentland, Gen. List, whose appointment was notified in the *Gazette* of Mar. 2nd; Aug. 12th. The appointment of 2nd Lieut. H. A. Smith, Middx. R. (T.F.), notified in the *Gazette* of May 19th, is antedated to Mar. 29th.

**Adjutants.**—2nd Lieut. (Temp. Capt.) H. P. Maybury, Middx. R. (T.F.); Jan. 8th. Capt. F. Steel, Essex R., S.R.; Feb. 10th. Lieut. E. Duveen, S.R., from a Flying Officer, vice Capt. W. H. C. Ramsden, E. York. R.; April 24th. Temp. Lieut. S. Henderson, Essex R., and to be transfd. to Gen. List, vice 2nd Lieut. (Temp. Lieut.) D. G. Nairn, A.S.C. (T.F.); April 29th. 2nd Lieut. W. L. Burt, Essex R. (T.F.), to be sec'd., and to be Temp. Lieut. whilst so employed; May 1st. Lieut. G. C. Pulman, Lond. R. (T.F.), and to be sec'd.; May 5th. Capt. G. R. Newton, Manch. R. (T.F.), and to be sec'd.; Capt. G. F. Earle, Rif. Brig., and to be sec'd.; June 1st.

**Equipment Officers, 2nd Class.**—2nd Lieut. S. Allenby, S.R., from 3rd Cl., and to be Temp. Lieut. whilst so employed; May 7th.

**3rd Class.**—Temp. Lieut. H. Day, R.A., and to be transfd. to Gen. List; Temp. 2nd Lieut. H. J. Dixon, Gen. List; Temp. 2nd Lieut. N. W. Birkett, E. Kent R., and to be transfd. to Gen. List; 2nd Lieut. R. G. Gould, Devon. R., S.R., and to remain sec'd.; Temp. 2nd Lieut. C. F. Overy, attd. R. Fus., and to be transfd. to Gen. List; Temp. 2nd Lieut. L. F. Williams, Gen. List; 2nd Lieut. W. H. Griffith, S.R.; 2nd Lieut. A. Dobson, S.R.; 2nd Lieut. R. J. Fetherston, S.R.; 2nd Lieut. (on prob.) A. R. B. Gill, S.R.; Temp. 2nd Lieut. A. C. Hankey, Gen. List; 2nd Lieut. (on prob.) P. H. Harbutt, S.R.; 2nd Lieut. (on prob.) D. Low, S.R.; 2nd Lieut. (on prob.) E. A. Masters, S.R.; 2nd Lieut. (on prob.) C. D. Clarke, S.R.; 2nd Lieut. (on prob.) T. A. Russell, S.R.; 2nd Lieut. (on prob.) H. A. Scott, S.R.; 2nd Lieut. (on prob.) V. M. Adamson, S.R.; 2nd Lieut. (on prob.) C. E. Amore, S.R.; 2nd Lieut. (on prob.) W. Brackenbury, S.R.; 2nd Lieut. (on prob.) J. E. Dawes, S.R.; 2nd Lieut. (on prob.) F. Walters, S.R.; May 9th.

**Memoranda.**—To be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.: P. D. Wilson, C. W. B. Tubbs, J. P. Sadler, E. R. Blount, H. Archer, H. Bayer and H. D. Spratt; June 1st.

**Supplementary to Regular Corps.**—2nd Lieut. E. L. Pegge relinquishes his commission on account of ill-health, and is granted hon. rank of 2nd Lieut.; June 1st. 2nd Lieut. (on prob.) T. M. Finnie resigns his commission; June 1st.

## London Gazette, June 1st.

**Flight Commanders.**—From Flying Officers, and to be Temp. Capts. whilst so empld.:—Temp. 2nd Lieut. T. P. H. Bayetto, Gen. List; 2nd Lieut. J. B. McCudden, M.C., Gen. List; May 1st.

**Flying Officers.**—Temp. 2nd Lieut. J. O. Whiting, attd. R. W. Surr. R., and to be transfd. to Gen. List; April 3rd. Lieut. G. B. E. Norburn, R. Ir. Fus., and to be sec'd.; April 14th. Lieut. G. F. Elliott, Canadian A.S.C.; April 15th. Temp. 2nd Lieut. (on prob.) F. J. Horrell, Gen. List; April 18th. 2nd Lieut. A. O. Beckett, High. L.I. (T.F.), and to be sec'd.; 2nd Lieut. J. E. H. Swain, Spec. Res.; May 9th. 2nd Lieut. J. S. Brown, E. Lan. R. (T.F.), and to be sec'd.; 2nd Lieut. D. Alexander, S.R.; May 10th. Temp. 2nd Lieut. S. Thompson, Gen. List; Temp. 2nd Lieut. L. D. Kirk, Sea. Highrs., and to be transfd. to Gen. List; Temp. 2nd Lieut. (on prob.) G. L. Eliot, Gen. List; 2nd Lieut.

J. W. Fleming, S.R.; Temp. 2nd Lieut. C. H. Graham, Gen. List from a Flying Officer (Ob.), with seniority from July 31st, 1916; 2nd Lieut. G. H. Miles, R.W. Kent R., and to be sec'd.; Temp. 2nd Lieut. (on prob.) E. R. Orner, Gen. List; Temp. 2nd Lieut. (on prob.) S. H. Taylor, Gen. List. Temp. 2nd Lieut. (on prob.) H. H. Wood, Gen. List; May 11th. Temp. 2nd Lieut. (on prob.) J. K. Arnold, Gen. List. Temp. 2nd Lieut. H. Jackson, Gen. List, from a Flying Officer (Ob.), with seniority from June 3rd, 1916; 2nd Lieut. J. W. G. Boyd, Spec. Res.; 2nd Lieut. R. A. Ayrton, S.R.; 2nd Lieut. (on prob.) N. P. Dixon, S.R.; May 12th. 2nd Lieut. (on prob.) S. P. Ashton, S.R.; 2nd Lieut. (on prob.) C. E. Kingsford-Smith, S.R.; 2nd Lieut. (on prob.) I. C. MacGregor, S.R. May 13th.

**Flying Officers (Observers).**—Temp. 2nd Lieut. T. Humble, Gen. List, seniority from Jan. 2nd; Temp. 2nd Lieut. H. Harris, Gen. List, seniority from Jan. 4th; Lieut. G. G. Bell, Canadian Inf., seniority from Jan. 9th; Temp. 2nd Lieut. A. E. Gill, Devon R., seniority from Feb. 13th, and to be transfd. to Gen. List; Lieut. M. McN. McBride, High. L.I. (T.F.), seniority from Feb. 16th, and to be sec'd.; 2nd Lieut. M. F. J. Halliday, Glouc. R., seniority from Feb. 17th, and to be sec'd.; 2nd Lieut. G. M. Lees, R.A., seniority from Feb. 21st, and to be sec'd.; Temp. 2nd Lieut. (on prob.) T. A. M. S. Lewis, attd. R.W. Kent R., seniority from April 8th, and to be transfd. to Gen. List; Temp. 2nd Lieut. (on prob.) P. H. B. Ward, Gen. List, seniority from April 9th; May 15th.

**Balloon Commander.**—Graded as a Balloon Officer. Temp. 2nd Lieut. T. Kennie, Gen. List, from a Balloon Officer, and to be Temp. Lieut. whilst so empld. (Substituted for the notification in the *Gazette* of May 2nd.)

**Equipment Officers, 2nd Class.**—2nd Lieut. J. H. Valentine, S.R., and to be Temp. Lieut. whilst so empld.; April 19th (substituted for notification in the *Gazette* of May 7th). Temp. Hon. Lieut. W. S. Smith, Gen. List, and to be Temp. Lieut. whilst so empld.; May 9th.

**3rd Class.**—2nd Lieut. W. C. Hayward; April 1st. Temp. 2nd Lieut. (on prob.) H. S. Wildeblood, Gen. List; April 14th. 2nd Lieut. (on prob.) C. G. Walton, S.R.; and Lieut. (on prob.) H. K. Fairbrother, S.R.; 2nd Lieut. (on prob.) A. L. Freeman, S.R.; 2nd Lieut. (on prob.) A. W. B. Medhurst, S.R.; 2nd Lieut. (on prob.) T. Campbell, S.R.; 2nd Lieut. (on prob.) C. B. Hudson, S.R.; 2nd Lieut. (on prob.) J. W. Tattersall, S.R.; 2nd Lieut. (on prob.) L. E. Heather, S.R.; Temp. 2nd Lieut. A. H. Sippe, Gen. List; 2nd Lieut. (on prob.) J. R. Sykes, S.R.; 2nd Lieut. R. B. Hutchings, S.R.; 2nd Lieut. (on prob.) D. H. Kemp, S.R.; 2nd Lieut. (on prob.) I. Massey, S.R.; 2nd Lieut. (on prob.) A. C. Nixon, S.R.; 2nd Lieut. (on prob.) W. Searle, S.R.; Capt. S. J. Hutchinson, Lond. R. (T.F.); Lieut. W. E. Harper, M.C., Durh. L.I., S.R., from a Flying Officer (Ob.); 2nd Lieut. G. Newton, A. Cyclist Corps (T.F.); 2nd Lieut. L. C. Kemp, R.E. (T.F.), and to be sec'd.; 2nd Lieut. A. N. Meier, S.R.; Temp. 2nd Lieut. F. A. Worlidge, Gen. List; May 9th. 2nd Lieut. O. F. Cooke-Yarborough, S.R.; May 14th. Temp. 2nd Lieut. (on prob.) J. M. Pinkerton, Gen. List, May 15th.

## Schools of Instruction—School of Photography.

**Instructional Officer.**—Graded as an Equipment Officer, 2nd Cl.—Temp. 2nd Lieut. F. A. Fyfe, M.C., Gen. List, as Equipment Officer, 3rd Cl., and to be Temp. Lieut. whilst so empld.; April 14th.

**Memoranda.**—The following from R.F.C., to be Temp. 2nd Lieuts. for duty with the Mil. Wing of that Corps:—1st Cl. Air Mech. D. G. Trenerry, Actg. Corp. L. Whistler, 1st Cl. Air Mech. W. I. Prothero, 2nd Cl. Air Mech. G. Feeny, Flight-Sergt. W. F. Wood, Corp. J. H. Gladding, Sergt. P. H. Morrish; May 9th.

To be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.:—2nd Cl. Air Mech. W. J. Bunting, from R.F.C.; April 24th. L. C. Bygrave, J. Booth, R. J. Murchison; May 11th. G. A. Bainbridge, E. S. H. Corbett; May 17th. W. B. Ward, late 2nd Lieut., R.F.A.; May 19th. J. Breckman, F. P. Burns, J. W. Cruickshank, W. A. Carroll; June 1st.

## London Gazette, Supplement, June 2nd.

The under-mentioned to be Temp. 2nd Lieut. for duty with R.F.C., Sergt. W. B. Thomson from R.F.C., May 4th.

**Staff Officer, 1st Class.**—Graded for purposes of pay as an A.A.G.—Maj. N. D. K. MacEwen, Arg. and Suth'd. Highrs., and to be Temp. Lieut.-Col. whilst so empld.; April 4th.

**Flight Commanders.**—From Flying Officers, and to be Temp. Capts. whilst so empld.:—2nd Lieut. S. Collier, Ches. R. (T.F.); May 7th. 2nd Lieut. (Temp. Lieut.) J. M. Child, Manch. R.; May 12th. Temp. 2nd Lieut. H. D. Davis, Gen. List; May 14th. Temp. Lieut. E. P. M. Robinson, Gen. List; May 18th.

**Flying Officers.**—Temp. 2nd Lieut. A. F. Muir, Gen. List; Mar. 23rd. Temp. 2nd Lieut. (on prob.) N. S. Hyslop, Gen. List; May 6th. 2nd Lieut. C. H. M. Platt, R. War. R., and to be sec'd. May 7th. 2nd Lieut. E. F. Matthew, R.F.A. (T.F.), from a Flying Officer (Ob.); May 9th, with seniority from June 16th, 1916. 2nd Lieut. W. G. Jacks, Durh. L.I. (T.F.), and to be sec'd., Temp. 2nd Lieut. (on prob.) H. Spurrier, Gen. List, Temp. 2nd Lieut. (on prob.) G. McPherson, Gen. List; May 10th. 2nd Lieut. (Temp. Capt.) D. A. Williamson, R.E. (T.F.), and to be sec'd.; May 12th. 2nd Lieut. (Temp. Lieut.) D. C. G. Murray, R.E. (T.F.), and to be sec'd., 2nd Lieut. T. W. Hart, Cyclist Bn. (T.F.), and to be sec'd., Temp. 2nd Lieut. F. J. Chown, Gen. List, Temp. 2nd Lieut. L. J. Bailey, Gen. List, Temp. 2nd Lieut. (on prob.) S. M. Spurway, Gen. List; May 13th. 2nd Lieut. P. H. Moody, S.R.; May 14th.

**Flying Officers (Observers).**—Capt. P. W. Brodie, Sea. Highrs., and to be sec'd.; April 18th, seniority Jan. 9th. 2nd Lieut. F. P. Adams, R.F.A., S.R.; May 17th, seniority Feb. 16th.

May 17th, seniority Feb. 20th:—2nd Lieut. J. Cross, R.W. Kent R., S.R., Temp. 2nd Lieut. S. E. Storrar, Oxf. and Bucks L.I., and to be transfd. to Gen. List.

May 17th, seniority Mar. 20th:—Lieut. C. MacLaughlin, Canadian Art., Lieut. A. S. H. Ryding, Canadian Gen. List.

May 17th, seniority April 14th:—Lieut. L. A. Wheatley, Canadian Inf.

**Equipment Officers, 3rd Class.**—Temp. Lieut. S. H. Hewett, Gen. List, from a Flying Officer (Ob.); Jan. 23rd, seniority Feb. 9th, 1916.

Temp. 2nd Lieuts. Gen. List:—G. Feeny, J. H. Gladding, P. H. Morrish, W. I. Prothero, D. G. Trenerry, L. Whistler, W. F. Wood; May 9th.

**Supplementary to Regular Corps.**—2nd Lieuts. (on prob.) confirmed in rank:—T. A. Peddell, W. Perkins, I. C. McGregor, R. W. Coutts, P. H. Moody.

## London Gazette Supplement, June 4th.

**Flying Officers.**—Temp. Capt. G. H. B. Wilson, A.S.C., and to be transfd. to Gen. List; 2nd Lieut. (Temp. Lieut.) H. D. Tapp, R.E. (T.F.), and to be sec'd.; April 22nd. 2nd Lieut. (Temp. Lieut.) W. J. Corbushley, York and Lanc. R. from a Flying Officer (Ob.), seniority May 3rd, 1916; Temp. 2nd Lieut. D. S. C. Newton, Gen. List; Temp. 2nd Lieut. (on prob.) C. T. Felton, Gen. List; Temp. 2nd Lieut. (on prob.) T. L. Tebbitt, Gen. List; Temp. Capt. W. H. de W. Waller, Gen. List, from a Flying Officer (Ob.), seniority Mar. 14th, 1916; 2nd Lieut. F. J. Westfield, Manch. R. (T.F.), and to be sec'd.; 2nd Lieut. D. Sinclair, High. L.I. (T.F.), and to be sec'd., May 16th; Temp. 2nd Lieut. (on prob.) C. P. Beadon, Gen. List, May 17th.

**Flying Officers (Observers).**—2nd Lieut. J. E. G. O'Byrne, R. Muns. Fus. and to be sec'd.; April 18th, seniority Dec. 22nd. Temp. Lieut. F. Crossley, E. Surr. R.; Temp. Lieut. H. G. Davis, Welsh R.; Apr. 15th, seniority Dec. 24th, 1916. Temp. 2nd Lieut. R. B. Beevor, R. Ir. Fus., and to be transfd. to Gen. List. Apr. 15th, seniority Dec. 27th, 1916. 2nd Lieut. N. L. Watt, K. Edward's Horse, S.R., seniority Jan. 28th, and to be sec'd.; Temp. Lieut. E. S. Harvey, A.S.C. seniority Feb. 18th, and to be transfd. to Gen. List; Lieut. F. B. Scullard, Can. Inf., seniority Feb. 20th; Temp. 2nd Lieut. R. V. Waters, Gen. List.



seniority Mar. 24th; Capt. G. B. Davies, Can. Inf., seniority Apr. 14th; 2nd Lieut. R. H. Kelly, Arg. and Suth'd Highrs. (T.F.), seniority Apr. 23rd; May 16th. 2nd Lieut. K. E. Ward, Welsh R., and to be secd.; May 19th, seniority Dec. 30th. 2nd Lieut. L. H. Short, Durh. L.I. (T.F.) seniority Jan. 15th, and to be secd.; Temp. Lieut. L. F. Bettinson, Midd'x R., seniority Feb. 13th; Temp. 2nd Lieut. W. H. Bolam, K.R. Rif. C., seniority Feb. 20th, and to be transfd. to Gen. List; Temp. 2nd Lieut. E. W. Pritchard, Durh. L.I., seniority Mar. 4th, and to be transfd. to Gen. List; Lieut. A. E. Pickering, Can. Gen. List, seniority Mar. 7th; Capt. W. H. Schoenberger, Can. Inf., seniority Apr. 8th; May 18th. Lieut. G. E. Leishman, Can. Gen. List, May 19th, seniority Apr. 29th.

**Balloon Commanders.**—(Graded as Balloon Officers).—The appointment of 2nd Lieut. J. H. Inskip, S.R., notified in the *Gazette* of May 15th, is antedated to Apr. 13th. From Balloon Officers: Lieut. A. G. A. Hodges, North'n R. (T.F.); Temp. Lieut. J. S. Giffard, Gen. List; 2nd Lieut. H. B. T. Hawkins, S.R., and to be Temp. Lieut. whilst so empld.; May 18th.

**Equipment Officers, 3rd Class.**—Qrmer. and Hon. Lieut. A. T. Hughes, Sco.

R.R. (T.F.); Feb. 28th. Temp. 2nd Lieut. P. L. Lindup, Gen. List, from a Flying Officer; Apr. 25th. 2nd Lieut. A. MacNamara, S.R.; Apr. 28th. Temp. 2nd Lieut. H. C. Short, Gen. List; Temp. 2nd Lieut. (on prob.) W. A. C. Allen, Gen. List; May 14th.

**Memoranda.**—2nd Cl. Air. Mech. H. Marsh, from R.F.C., to be Temp. 2nd Lieut. (on prob.) for duty with the Mil. Wing of that Corps; May 6th.

To be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.: H. R. Horswill, S. F. Boam, E. F. Hutley, W. Burrows, W. J. Bird; June 1st.

**Supplementary to Regular Corps.**—2nd Lieuts. to be Lieuts.: C. Faber, W. J. King, C. L. Willcox, A. Hunt, H. H. McL. Fraser, E. B. Macmannus, E. G. Manuel, J. F. Luscombe, A. H. G. Fellowes, L. R. Wright, A. B. Fanstone, J. W. Francis, K. A. C. Creswell, G. F. Golding, R. P. Atwood, E. B. W. Bartlett, N. G. Caridia, C. W. Carleton, N. Comper, I. B. Hart-Davies, G. J. Harter, (Temp. Capt.) W. E. L. Seward, G. R. Travis, G. D. Harrison, T. Perkins, W. S. Shirlcliffe, (Temp. Lieut.) C. F. Blunt, J. H. Robertson, E. S. T. Cole; May 1st. **General List (R.F.C.).**—The appointment of E. C. Clark to a Temp. Comm. as 2nd Lieut. (on prob.) notified in *Gazette* of May 8th, page 2,354, is cancelled.



## AIRCRAFT WORK AT THE FRONT.

### OFFICIAL INFORMATION.

#### British.

*War Office, May 29th.*

"*Salonica.*—The R.F.C. and R.N.A.S. have recently carried out several successful raids. Bombs were dropped on Drama, where direct hits on the enemy's aerodrome were observed, also on Livunovo (north-east of Petric), and several places west of Lake Doiran."

*General Headquarters, May 29th.*

"Two German aeroplanes were brought down yesterday in air fighting, and six other hostile machines were driven down out of control. Five of our aeroplanes are missing."

*General Headquarters, May 31st.*

"Two German aeroplanes were driven down yesterday out of control. One of our machines is missing."

*General Headquarters, June 1st.*

"On the night of May 30th-31st long-distance bombing raids were carried out by our aeroplanes with good results against hostile ammunition depôts and railway stations."

"In air fighting yesterday two German aeroplanes were brought down, and one other hostile machine was driven down out of control. None of our machines is missing."

*General Headquarters, June 2nd.*

"Our aeroplanes were active again yesterday, and much valuable work was accomplished. In air fighting one German machine was brought down and six others were driven down out of control. Three of our aeroplanes are missing."

*General Headquarters, June 3rd.*

"Activity in the air continued yesterday. Four German aeroplanes were brought down in air fighting, and five others were driven down out of control. Another German machine was driven down by our anti-aircraft guns. Four of our aeroplanes are missing."

*General Headquarters, June 4th.*

"In the course of bombing raids on the night of the 2nd-3rd instant our aeroplanes obtained hits upon four enemy trains, one of which was completely destroyed. In air fighting six German aeroplanes were brought down, and one other hostile machine was driven down out of control. Four of our aeroplanes failed to return."

#### French.

*Paris, May 29th.*

"Yesterday seven German aeroplanes were brought down in air fights by our pilots, and 12 others, which were seriously damaged, were forced to land in their lines."

*Paris, May 30th.*

"Two German aeroplanes were brought down by our pilots during the day yesterday. It is confirmed that another enemy machine was brought down on May 27th in the region of Filain."

*Paris, May 30th.*

"*Salonica.*—There was a cannonade all along the front. Our aeroplanes bombarded Austrian camps north of Devoli (Eastern Albania)."

*Paris, May 31st.*

"During yesterday five German aeroplanes were brought down by our pilots. According to further information, five other enemy machines which were reported damaged during preceding days were really destroyed."

*Paris, May 31st.*

"*Salonica.*—Much activity by airmen on both sides is reported. Enemy aeroplanes dropped bombs on Florina and Bukovo. British aeroplanes successfully bombarded an enemy camp at Bogdanci."

*Paris, June 1st.*

"To-day two German aeroplanes were brought down by the fire of our anti-aircraft guns, and fell in their own lines."

"In the period from May 17th to 30th 32 German aeroplanes were completely destroyed on our front in the course of aerial flights. In addition, 57 other enemy machines were seriously hit, and were probably smashed on falling in their lines. Captain Guynemer brought down five aeroplanes, four of them on the same day. Two of these machines were brought down within one minute, for the first time perhaps during the war."

"These five new victories bring up to 43 the number of German aeroplanes destroyed up to date by this gallant officer. In the same period Lieut. Pinsard placed three enemy machines *hors de combat*, thus triumphing over his fifteenth enemy. The following are the names of other pilots who have increased the number of their victories: Adjutant Madon, 12 machines; Lieut. Tarascon, 11; Adjutant Jailler, 10; Capt. Maton, 6; and Sergt. Souiller, 5."

*Paris, June 2nd.*

"On June 1st five German aeroplanes fell in flames or were dashed to pieces on the ground as the result of encounters with our pilots. According to further information, two other German machines were brought down—one on May 27th and the other on May 30th. Adjutant Fonck has brought down five German machines up to the present."

"*Salonica.*—Enemy airmen bombarded Kotitza and the railway near Salonica. No damage was done. Our aeroplanes dropped bombs on several enemy encampments."

*Paris, June 4th.*

"During the day of the 2nd and 3rd our pilots brought down six German aeroplanes and a captive balloon. In addition our anti-aircraft guns accounted for three enemy machines, the occupants of which, including three officers, were captured. Some enemy aeroplanes bombarded the regions of Nancy and Dunkirk. There were several civilian victims at Dunkirk."

#### Russian.

*Petrograd, May 29th.*

"One of our aeroplanes, while performing a scouting operation, was attacked by three enemy Fokker machines, and after several minutes' battle fell in the enemy's lines in the region of the village Bilieschi (north-east of Focsani), Pilot Bigelya and Observer Sub-Lieut. Tarhov evidently were killed."

*Petrograd, May 30th.*

"On the night of May 29th our pilot Ensign Argeev, and observer, Second Captain of Cavalry Skarsky, dropped four bombs on an enemy position in the region of Stanislau. In the morning, about 4 o'clock, there appeared over Podgaitze five aeroplanes, which threw about 40 bombs without doing us injury. Our aviators had an encounter with the enemy. During this engagement our gallant airman, Ensign Kakorin, was killed."

*Petrograd, May 31st.*

"Our airmen dropped four bombs on an enemy patrol near the village of Soli (Libau-Romensk Railway), and a like number upon the station at Voigiany (Bologoe-Sedlecze Railway), where successful results were observed."

*Petrograd, June 1st.*

"In the direction of Baranovitchi one of our aeroplanes, while making a reconnaissance of a height, fell, and was burnt. In the region north-west of Podgaitze an enemy aeroplane set fire, with incendiary bullets, to one of our observation balloons, which fell in flames. The observer, Ensign Abramoff, perished. In the region of Parziu, west of Tekukiu, one of our aeroplanes was brought down by a German battleplane, and the pilot was killed."



*Petrograd, June 3rd.*

"German aeroplanes dropped about 40 bombs in the region of the station at Luninetz. Our aviator, Lieut. Orloff, carried out a raid in the night on the enemy's position near Stanislaw, dropping a number of bombs."

**Italian.**

*Rome, May 30th.*

"On the afternoon of the 28th one enemy aeroplane was brought down in a severe air fight east of Mount San Marco."

*Rome, June 1st.*

"Last night enemy aircraft made a raid on Udine and Cervignano, dropping incendiary bombs. Our anti-aircraft guns put them to flight. Very slight damage was done and one civilian wounded. Our machines in reply successfully bombed the military works of Barcola, north of Trieste, and returned safely."

"About May 26th a French submarine torpedoed and sank off Cattaro a large enemy submarine, which was leaving the port, escorted by a torpedo-boat. Although attacked by enemy aeroplanes, the French submarine returned in due course to her base."

"Last night, following a raid carried out by enemy aeroplanes against the rear line of our army, some of our seaplane squadrons in the Upper Adriatic ascended immediately and bombarded between 9 and 11 o'clock the Lloyd and Opeina yards. Our aeroplanes also attacked a squadron of enemy destroyers, which escaped by making off at great speed along the coast towards Trieste. All our machines returned in due course to their bases."

*Rome, June 2nd.*

"Numerous air encounters took place yesterday above Gorizia, and raids attempted by the enemy on the city were all repulsed. One enemy machine was brought down near Aisovizza. Also our bombing squadrons of aeroplanes, accompanied by chasing machines, were yesterday very active. Military works, aviation camps, dumps, and railway junctions were successfully bombed from Duino to Opicina, north-east of Trieste. All our machines returned safely."



## AIR WARFARE IN MAY.

SEVEN hundred and thirteen aeroplanes were brought down on the Western battle front during May, only four less than in April, when the struggle for superiority in the air reached its maximum intensity, states the *Times* in its admirable monthly summary.

In this period the Germans lost 442 machines, and the Allies, according to the claims of the enemy, 271. It is impossible to resist the conclusion that the air reports of German Main Headquarters are, like their military communications, exaggerated, even when they are not quite false. Our General Headquarters in France, the only one of the belligerents which acknowledges its own losses, admits that during May 86 British aeroplanes failed to return to their base. Deducting this figure from the German total, it would mean, if it is accurate and does not include, as the enemy's monthly summary frequently does, machines brought down on the Eastern and Balkan fronts, that the French Air Service has lost 185 aeroplanes.

But taking the figures as they are, they show that the Germans lost 73 more machines last month than in April, that our losses were 61 fewer, and that those of the French were 16 more. British airmen and gunners claim 243 of the 442 German machines and the French the other 199.

The British successes were classified in the daily reports from General Headquarters as follows: Destroyed, 19; crashed, 2; brought down (which, as in the case of the French, means destroyed), 91; fell in our lines, 9; brought down by anti-aircraft guns, 9; driven down out of control, 113.



### The Aeronautical Society.

THE Council of the Aeronautical Society of Great Britain announce that the Members' Room at the new headquarters at 7, Albemarle Street, W., is now ready for use. They hope that the members will fully avail themselves of the library and reading room.

### The Wilbur Wright Memorial Lecture.

THE fifth Wilbur Wright Memorial Lecture is to be given on Wednesday next, 13th inst., at the Grafton Galleries, Grafton Street, W. The lecturer this year will be Lieut.-Col. Mervyn O'Gorman, who will take as his subject "Foresight in Aeronautics: Technical, Political and Financial." The chair will be taken at 8 p.m. by the Right Hon. Lord Sydenham of Combe.

*Rome, June 3rd.*

"Fine weather was favourable to aerial activity yesterday. Enemy aircraft which attempted reconnaissances over our lines in Trientino were driven off by anti-aircraft batteries and by our own airmen. This morning an enemy aeroplane over Gorizia was brought down and (? another) east of Vertojba."

**German.**

*Berlin, June 1st.*

"Balkans.—The enemy yesterday lost four aeroplanes and three captive balloons by air attacks of our airmen. On Thursday a squadron of German seaplanes, one of which was manned by Bulgarians, successfully dropped bombs on Sulina, the Roumanian port on the Black Sea. In spite of strong counter attacks all the machines returned undamaged."

*Berlin, June 3rd.*

"During the night May 31st-June 1st English airmen dropped bombs on a camp on our lines of communication which resulted in the death of one French prisoner and in 91 being wounded. Our flying squadrons dropped bombs with destructive effect on railway works, munition depôts, and troop camps before the Arras-Aisne front."

"The enemy yesterday lost 10 aeroplanes in aerial encounters and as a result of our anti-aircraft fire."

**Austrian.**

*Vienna, June 2nd.*

"On the Isonzo there has only been artillery firing, and very lively aerial activity. Our airmen brought down in air fights two hostile planes."

*Vienna, June 3rd.*

"Italian airmen bombed Trieste and other places in Istria. At Trieste a woman and child were killed."

**Bulgarian.**

*Sofia, June 2nd.*

"In the Cerna bend Lieut. Burchard brought down an enemy aeroplane, which fell behind our lines; and on the Roumanian front our artillery brought down a hostile machine, which fell in the Danube Delta."

The French Ministry of War states, without any qualification, that of the German machines brought down by French airmen 80 were destroyed. "Their destruction," it was reported, "has been most strictly verified." The other 119 were driven down seriously damaged "and probably crashed to the ground in the enemy's lines."

As in previous months, the German reports for May have not always distinguished between airmen's and gunners' successes. In the case of 165 machines it was stated that they were brought or shot down in air fights; 55 others were attributed to airmen and gunfire; 37 were reported merely as "shot down," 12 as brought down by gunfire, and two "forced to land."

The most interesting personal item concerning the German Air Service is the complete disappearance from the official reports of Cavalry Captain Baron von Richthofen. This airman was the commander of a squadron which is known at the front as Richthofen's "Circus," and he and it have been credited with quite dazzling performances. Richthofen was sprung upon the public on February 15th as the victor in 21 air fights, and between that date and April 30th (on which day he is said to have brought down five enemy machines) he was reported to have accounted for 31 other aeroplanes. Since April 30th, however, his name has not appeared once in the German reports. But the name of another Richthofen—a lieutenant—has figured in the reports since May 7th, and it is claimed for him that he has brought down 24 machines.



### Air Traffic in Central and S.E. Europe.

It is announced in Germany that a proposal for the establishment and licensing of the International Air Traffic Co., Ltd., has already been laid before the German, Austro-Hungarian, Turkish and Bulgarian Governments, while a Government Air Traffic Bill is to be presented to the Reichstag shortly. A scheme has been elaborated for linking up the four countries in a comprehensive network of air-routes, and, in addition to asking for working powers, it has formulated a new code of aerial laws, which the states in question are asked to consider and eventually enact.

According to a report received in Copenhagen from Berlin the Austrian Aero Club has initiated a regular air service between Hamburg and Constantinople, carrying passengers and mails, a distance of 2,840 kilometres. The total cost of the scheme is 40,000,000 marks.



## SIDE-WINDS.

PRACTICAL and prompt in all his good works, Sir Charles Cheers Wakefield, who happened to be in Folkestone at the time the bombs were falling, at once forwarded £100 to the town's relief fund, and, in addition, offered to take into the National Children's Home and Orphanage all the children who were left orphans by the raid.

THE artificial sponge is a thing with which most people are familiar, but few are aware that its manufacture has been almost a foreign monopoly. During the last five years some have been made in the States, but now there is no need to go abroad. After a long series of experiments, Mr. G. W. Leeson, an English inventor, has been successful in producing an artificial sponge, which it is claimed is lighter, cleaner, softer, odourless, full of elasticity, more durable and more absorbent than any other. In colour the Sorbo sponge, as it is called, resembles and retains the hue of the natural sponge. It is being made in four sizes, selling from 1s. to 5s., by the Leeson Sponge and Rubber Co., Ltd., a British concern financially and industrially, at their New Enterprise Works, Chiswick Road, Chiswick. The sponges are just the thing for brightening up paint and varnish, and it is claimed that they will last longer at the job than any other.

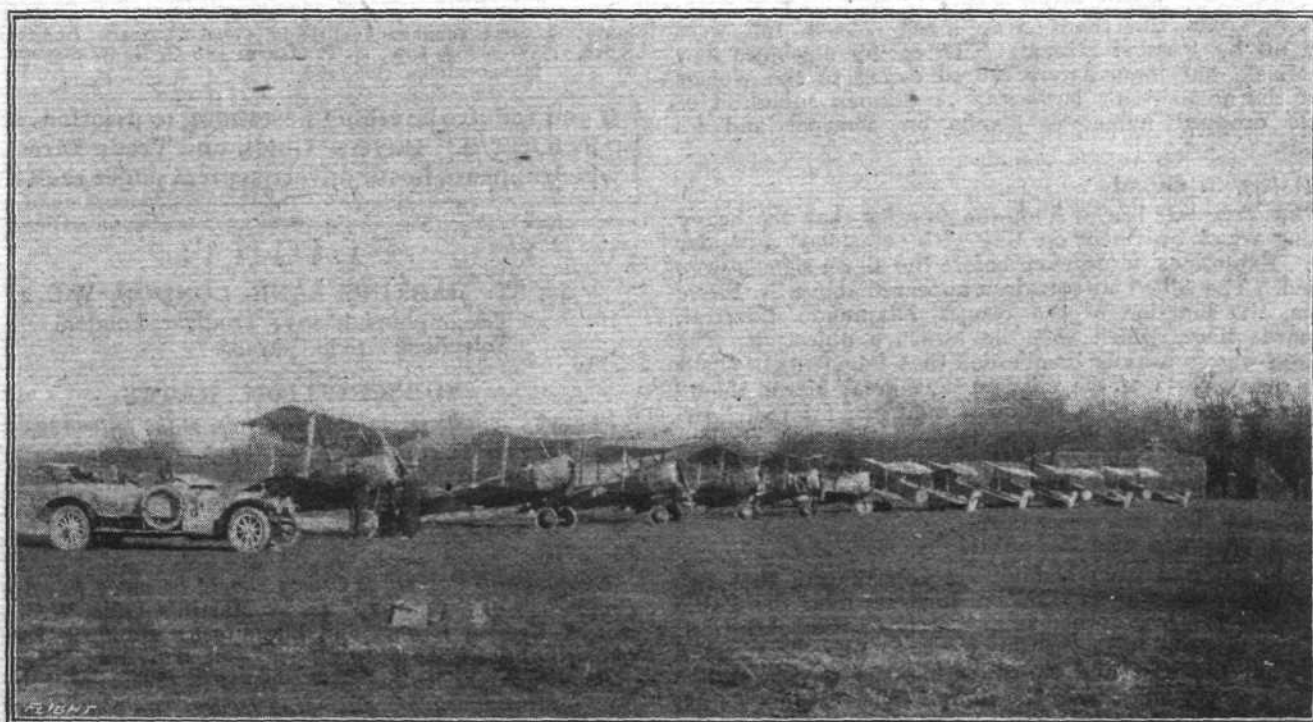
A CHANGE of address to note. Thomson-Bennett Magnetos, Ltd., have now removed their offices to their new works at Great King Street, Birmingham. Their new telephone number is Central 1308, and the telegraphic address is "Trembler, Birmingham."

THE Light Electric Motor Co., of Baltic Street, Dundee, make a speciality of portable electric tools, many of which should find a place in well-equipped aircraft works. They can supply portable drills of various types capable of drilling up to  $\frac{1}{2}$  in. diam. in mild steel. They can also supply wood drills, electric grinders and grinding, polishing machines and pumps fitted with their special motors. It is claimed that owing to the special construction of these motors no overload cut-out is required, and should the drill stop in going through a hole no burning out of the armature can take place. The windings are so arranged as to give a speed regulation according to the pressure required for drilling, and it is stated that owing to the small consumption of current the motors can be connected to any ordinary lighting circuit lampholder. Full particulars regarding dimensions, weights, prices, capacities, &c., of the various tools are given in the lists published by the firm, and they will be pleased to send copies to any of our readers.

FEW people realise the enormous economy of having garments scientifically cleaned for a few shillings, instead of buying new ones for many pounds. Persons of moderate means and provident habits have always taken advantage of the

cleaning facilities offered them by the several great industrial undertakings, the names of which are household words, but it is nevertheless a new idea to many that a topcoat, or suit, can have the period of its usefulness doubled or trebled by skilled treatment, which removes dirt, revives colours and restores shape to an extent that converts an old into practically a new garment. The highest quality of textile goods is by far the most responsive to the various known and secret processes of renovation, adopted by different firms, and shows in proportion even better results than in the case of cheap materials, of which the wearing powers are less robust and the colourings less constant. Unfortunately, owing to shortage of labour and volatile solvents the cleaning trade is much hampered at a time when its services are in most urgent demand, and so much delay in executing work is inevitable that the whole system, as a measure of general economy, is disparaged and rendered far less effective than it should be, having regard to its profit to the public and the State. Burberrys, of Haymarket, are endeavouring to meet these difficulties by all the means at their disposal, and have enlarged and re-organised their cleaning works. In spite of many obstacles they have been very successful in maintaining their reputation for efficient and expeditious service, although, owing to uncertainty in volume of work and transport irregularities, it is almost impossible just now to make time the essence of any contract. This problem is much aggravated by the fact that Burberrys clean and reproof their own military and naval weatherproofs free of charge to officers, and naturally give priority to such garments, whose owners are serving our country in the field, and cannot afford to wait for anything so vital to their health and comfort as a Burberry safeguard. In spite of the greatly increased cost, we believe that Burberrys' price list for cleaning, reproofing or dyeing has not been altered since the war, although such a course would be fully justified by the example of many firms, to the extent of a 33 per cent. rise or thereabouts. Particulars of their prices are obtainable from Burberrys, Haymarket, London, or Reading.

LAYING claim to but four years' flying experience, G. Virgilio is seeking an appointment as test pilot. In reality Mr. Virgilio's flying started as far back as 1908, when as a pupil he joined a flying school in Italy. The school was unfortunate in its financial affairs, and Virgilio's schooling came to an untimely end. A trip round the world terminated in this Italian flyer coming to an anchor at Hendon, where he joined the Hall School. Subsequent experience was gained with the schools of Beatty, Ruffy-Baumann, and Wells, from which latter it is now incumbent upon him to seek something new, and a test pilot's activities are his wishes. We hope in response to his announcement in our advertisement columns he will soon get fixed up with somebody able to make use of his undoubted talents. His address is Mallabur, Hambrook, Hants.



A long row of fighting scouts at the Whitehead Aerodrome, ready for delivery.



## A Zeppelin Souvenir for Chelmsford.

THE military authorities have presented a machine-gun from one of the Zeppelins brought down in Essex to the Chelmsford Corporation Museum.

## What the U.S. is Doing.

SOME further details regarding the plans for an American Flying Corps have been published by the Aircraft Production Board of the Council of National Defence at Washington. Three huge aerodromes are being constructed in the United States. In France a position for the final training camp has been chosen. It is hoped that at least 500 men will be trained by the end of next month, and that in the forthcoming year 6,000 pilots will be turned out. In the smaller aviation camps already existing work is already proceeding vigorously. The Board expects to construct 3,500 machines during the next 12 months. Contracts for some of them are already let.

There is a tendency among the general public to expect too much, and the *New York World* and the *Sun*, among other papers, are uttering warnings against this attitude. They point out that when the war started the American Aviation Corps scarcely existed, and that virtually all the American machines are merely training machines. The *Sun* says that much planning of facilities, human and mechanical, remains before the great enterprise can be got fairly under way.

## A Mid-Air Charge.

ONE of the first cases of direct, deliberate ramming of one aircraft by another was seen a few days ago behind the German lines, says Mr. W. Beach Thomas in a despatch, dated June 1st, to the *Daily Mail*. A British and a German machine charged each other direct from a considerable distance. The German, who must have been a very stout fellow, kept a perfect bee-line to the very end, apparently seeking mutual destruction. Our pilot turned at the very last moment, and so rammed not the centre, but the right wing of the opposing craft, which he carried away, and the German plane fell in a heap to the ground. The British machine was very badly damaged, but was still just airworthy, and the engines carried it in a wobbling declivity safe into harbour.

## An Air Raid on Venice.

FROM Rome it is reported that on the night of June 2nd enemy aeroplanes coming from the sea flew along the coast towards Venice and dropped bombs in the environs of the city. The damage done was insignificant. Three civilians were injured, including a woman. Italian and French seaplanes went up, and notwithstanding the enemy fire successfully bombed industrial establishments near Trieste, and military points near Parenzo. All the seaplanes returned to their bases.

## Attempted Air Raid on Odessa, &c.

A PETROGRAD telegram states that four German aeroplanes on June 2nd tried to approach Odessa, but were driven off by Russian airmen. Two enemy machines flew over Minsk, but immediately retired owing to the violent fire of the anti-aircraft batteries. A German squadron of aircraft dropped numerous bombs on Tiraspol and its environs.

## The Raids on Ghent.

THE *Telegraaf* learns from the frontier that the heavy bombing attack on Ghent on May 28th occasioned a regular panic. Explosions began even before the alarm signals were sounded. The Allied air squadron appeared above St. Pierre Station, the junction of the Bruges, Dixmunde, Courtrai, Oudenarde lines, which was the airmen's objective. The squadron was so heavily bombarded that fragments of shells fell in many parts of the city, causing great alarm among those in the streets. The station was hit and injured. Aircraft from St. Denis Westrem Square, near the station, ascended, a battle ensuing. It is rumoured that some of the most important Army authorities were in the station, passing through.

## Swedish Warship and Zeppelin.

It is reported from Malmö, via Copenhagen, that two Zeppelins appeared at 11 a.m. on June 1st over the Baltic off Ystad. The first turned immediately to the south-west, when the torpedo boat "Pollux" went out. The second came from the east and sailed within the territorial line scarcely two sea miles from the shore. The "Pollux" fired repeatedly at the Zeppelin, which, after some time, went outside the three-mile limit and steered towards the west.

## German View of Rival Air Services.

GENERAL VON HOEPPNER, Commander-in-Chief of the German Air Service, in an interview with a Dutch journalist, declared, it is reported from Amsterdam, that the German aviators have won the supremacy over their enemies, although the British and French on the Western front were numerically superior. On the Eastern front, however, Germany is rather stronger, while in the Balkans the balance is again in favour of the enemy.

The British, he said, showed in air fights that they are of the Germanic race, for they seek fight, and fight until either they or their opponents are killed. German aeroplanes generally are better than those of the enemy, though the new English Sopwith triplanes are excellent.

The technical preparedness of the French he described as middling, and that of the British inferior.

"While we Germans consider every flight as a military act, for the British flying is but sport, and, when it comes to a fight, good sport. The German is a soldier first. Our German military training cannot be outdone by Britain's three years' war-waging. Every one of our fliers hopes to be a Boelcke, and their comrades' deaths do not frighten them."

## A Zeppelin Over Holland.

A ZEPPELIN was seen in Holland on June 2nd, apparently following the railway line from Hoogezand to Groningen. The frontier guard at Bellingwolden fired 70 shots at it.

## Swedish Aviator Attacked by German.

FROM Malmö the *National Tidende* learns that the Swedish aviator, Dr. Thulin, whilst flying over Swedish territory a few days ago, was fired upon from a German aeroplane. When near Landskrona he observed two aeroplanes which he thought were Swedish. He thereupon started his own machine and ascended in order to greet them, but when about 30 yards from one of them a machine-gun was pointed at him, and several shots were fired at him. He was unarmed, and succeeded in escaping without being wounded. Some pilots who witnessed the incident state that the machine was over Swedish territory. Dr. Thulin has reported the matter to the War Department.

## PUBLICATIONS RECEIVED.

P.-B.: *The Story of His Life*. Hertford: The Imperialist Press, Ltd. Price, 1s. net.

*Second Annual Report of the National Advisory Committee for Aeronautics*. Washington, U.S.A.: Government Printing Office.

## Aeronautical Patents Published.

Applied for in 1915.

Published June 7th, 1917.

16,788. F. LA ROCHE. Aeroplanes, hydroplanes, &c.

Applied for in 1916.

The numbers in brackets are those under which the specifications are printed and abridged, &c.

Published June 7th, 1917.

5,270. J. AND I. TURNER. Textile fabrics used in aircraft. (106,113.)

5,818. MARTINSYDE, LTD., H. P. MARTIN AND G. H. HANDASYDE. Aeroplane controls. (106,116.)

If you require anything pertaining to aviation, study "FLIGHT'S" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week.

## FLIGHT.

44, ST. MARTIN'S LANE, LONDON, W.C. 2.

Telegraphic address: Truditur, London.

Telephone: 1828 Gerrard.

## SUBSCRIPTION RATES.

"FLIGHT" will be forwarded, post free, at the following rates:—

UNITED KINGDOM.			ABROAD.		
	s.	d.		s.	d.
3 Months, Post Free..	3	10	3 Months, Post Free	5	0
6 " " " "	7	7	6 " " " "	10	6
12 " " " "	15	2	12 " " " "	20	0

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 44, St. Martin's Lane, W.C. 2, and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.

Should any difficulty be experienced in procuring "FLIGHT" from local newsvendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.